

THE  
**SOUTHERN AGRICULTURIST.**

MAY, 1832.

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**PART I.**

**ORIGINAL CORRESPONDENCE.**

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ART. XLII.—*Reflections on the Theory and Practice of Agriculture: by* WHITEMARSH B. SEABROOK.

“ Edisto-Island, March 7, 1832.

Dear Sir,—I have to acknowledge the receipt of your favour of the 8th ult. It is true that I have not complied with my promise made to you the last year. The excitement consequent on the struggle in which we are engaged with the Federal Government, must plead my apology. When our rights shall be restored, and the State shall once more exhibit the animating scene of olden times, my humble services shall be at your command. At this moment I am quite at a loss to know on what theme to comment. I do not wish touch the subject of manures, or indeed any other topic of practical husbandry, until I shall have leisure to devote to its elucidation. In the mean time, then, I offer you the following hasty reflections on the theory and practice of agriculture.

It is the fashion now-a-days to decry book learning in relation to our profession. Theoretical suggestions, unless they have been subjected to the test of experiment, and all knowledge not derived from actual experience, are considered utterly useless and illusory.—This belief derogates from the dignity of the planter's vocation, and is based on the assumption, that agriculture consists solely in sowing and reaping, and that to this effort

even the idiocy of the Hindo is competent. That the success of agriculture mainly depends on physical labour, I readily concede, but, that its variant duties can be as well discharged without as with a knowledge of its principles, I broadly deny. Every important improvement that has ever taken place in husbandry is proximately to be traced to the agency of mind; and had it not been for the literary exertions of a few of the patriotic citizens of Europe, husbandry would, perhaps, have been a century in the rear of its present condition. In proof of my assertion, I would here remark, that the rural art was at a very low ebb until the end of the sixteenth century, when Fitzherbert, a judge of the common pleas, published "the Book of Husbandry." The advance subsequently made in the theory, was not however, very considerable, until the appearance of Sir Hugh Platt's treatise on the means of meliorating and fertilizing exhausted soils. This was at the time of the commonwealth. At the period of the restoration, agriculture was much neglected, but it afterwards revived and was greatly improved by the mental labours of Evelyn and Tull. Since that epoch many of the most distinguished men of Great-Britain have contributed their mite in aid of the science of agriculture and rural economy. In 1793, the British Board of Agriculture was established. To this Society we are indebted for eighty volumes of the most useful knowledge—so useful indeed, that in the opinion of an eminent writer, they cannot fail of producing national advantages, greater perhaps than have been derived from any other political institution of modern times. Since the publication of Tull's System of Husbandry, it is supposed, that every acre now in tilth in Great Britain adds annually one hundred fold to the usual increase under the old practice. These are historical facts, and they go far to shew the importance of a knowledge of the principles of our calling, especially to a community where cultivation of the earth is the chief employment of its citizens.

The bloody wars which for many years have desolated Europe, and the relief which the inherent power of agriculture has ever afforded to it, appear to have satisfied the rulers of that portion of the civilized world, that their true policy consists in the advancement of husbandry. In the prosecution of this purpose, they have, as a primary means to attain their end, established schools "to improve the art

of cultivation and the character of the cultivator." So great is the spirit of emulation among the nations of Europe, in relation to this matter, and so extensive have been the advantages resulting from their agricultural seminaries, that, it is believed, not many years will elapse, before every college will engraft geonicks on its system of instruction. It is well known that the graduates of the European schools, but especially, the Hofwyl school in Switzerland, are employed at high salaries in different parts of the Continent. Mr. Madison in bringing this subject to the view of the Virginia Legislature remarked, that to the due success of agriculture, theory and practice are both requisite. They always reflect light on each other. If the former, said he, without the test of the other, is a vain science, the latter, without the enlightened precepts of the former, is generally enslaved to ancient modes, however erroneous; or, at best, but too tardy and partial in adopting salutary changes. There, perhaps, never was a more sound and judicious observation.

In every pursuit there may be said to be two classes, who, in the furtherance of their profession, employ agents somewhat diverse in their character. The number in the first class is always exceedingly limited: they may be called the thinkers, whilst the much larger portion, are the actors and only efficient agents. The former are not unlike the pioneers of an army in reference to number and the great value of the duties of their station. The peculiar office of the theorist is to penetrate the arcana of nature, to solve doubts, remove difficulties, and, in general, to become acquainted with those principles, as far as they can be known, which regulate the material world. That this knowledge conduces to the prosperity and happiness of man, we have abundant evidence. In proportion to the expansion of the mind consequent on education and a habit of reflection, will be the number and variety of those discoveries which abridge human labour and add to the comforts of society. Until the time of the scientific Tull, agriculture was without order, without method, without even a fixed and determinate character. Its elementary principles were unknown. There was no text book to guide us to a knowledge of its treasures. Every farmer was a mere labourer, and in the prosecution of his daily toil, his mind took no part. He grasped the spade or the plough



instinctively. Even at the present day, in so little repute is an acquaintance with the rural art in this country, that whilst every art and every science, nay, every accomplishment, has its teachers, agriculture, in the language of Columella, has neither masters to teach it, nor pupils who seek to be taught. It would not, perhaps, be hazarding too much to assert, that this state of things has been brought about by the planter himself. For ages he has said, "give me the results of practice. I need not the aid of the theorist." In other words, I will be guided only by what is experimentally known to be true. The efforts of mind are not necessary to my vocation. He who coincides in this opinion, is not seemingly aware, that theory is the foundation of practice. No experiment was ever tried but to determine speculative suggestions. In the discharge of the duties of his profession, does the planter perform a solitary act unaccompanied by reflection? To reflect is to theorize. If, after an attentive deliberation as to the course he should pursue, he ultimately determines to follow the plan experimentally ascertained to be good, is it not manifest, that, in that event, he will be acting in obedience to the theory which originated the plan? Even in cases where mere accident discloses important agricultural results, the zeal of the practicalist is always certain of aid from the inquiry, which naturally presents itself to his mind, as to the cause of those results.

Chemistry, mineralogy and botany are perpetually unfolding many secrets of great value to the farmer. It is the province of the first to investigate the nature of soils, to ascertain the causes of their fertility or barrenness, and what is most calculated to render each particular kind of soil productive. The knowledge of chemistry enabled Lavoisier to double his crops in a few years. Possessed of the science, the husbandman comprehends the mutual agency and value of all the material gifts of providence: without it, he must renounce, perhaps forever, many enjoyments, which form the common inheritance of his species.

In agriculture too is embraced domestic economy, which is the foundation of political economy—a knowledge of the one is as essential to every individual in life, as a knowledge of the other is to the statesman or legislator. The principles which regulate the production, distribution and consumption of wealth in reference to individuals, are the



same as those which relate to society; for society is but the aggregate of the individuals who compose it. From the foregoing remark, it will be perceived, that agriculture is a very comprehensive science, and that the prevalent notions in relation to it are erroneous and degrading. In it "we have to consider the nature of the soils we meet with, on and near the surface of the earth. The methods of correcting those which are unfavourable to the production of useful vegetables; the improvement of such as are deteriorated by over-cropping; such impliments as are fittest for facilitating the operations of husbandry; the means and powers best adapted for such purposes; the cattle and live stock most profitable to man, whether for labour or more immediate use as food; the grass, grain, roots, and pulse, most beneficial to him; and the minor subjects connected with this important science." The planter of the Southern States has another duty to perform, on a correct understanding of which the safety of his entire property depends. The management of his slaves not only puts in severe requisition his intellectual powers, but draws largely on that kind of knowledge which the business of legislation demands. Our supervision over the coloured population has progressively improved. Education is daily devising new schemes for their better government. Whilst the moral condition of the black has been sensibly meliorated—whilst he is better fed and clothed than formerly, it is equally true, that his daily work has been greatly lightened. The use of labour-saving machines, and a more prudent and economical consumption of time, added to the establishment of wiser police regulations, have effected these salutary changes.

In relation to himself, it is true, that a mere theorist may be denominated an unproductive labourer. But the good he is instrumental in creating by exciting a spirit of inquiry and necessarily of action, cannot well be appreciated. A distinguished man has somewhere said that no one can open a book without receiving useful admonitions. The remark is strictly applicable to the planter when he examines a work on husbandry. He reads not merely to arrive at the experience of others, but to penetrate the *rationale* of many trueisms which daily pass under his observation. A train of thought is thus laid, which by engendering new

creatures of the brain, are not unfrequently followed by highly beneficial results. In this way the most valuable discoveries in science are made. It is not to be expected, nor in truth is it practicable, that any planter should possess all the knowledge embraced in the system of agriculture. But it is desirable, that he should understand the material principles of his profession. He ought to be able at least to assign a reason for his practice. He cannot otherwise feel the dignity and value of his calling. The condemnation, which the planter is so apt to pass on book-learning, (as it is sarcastically called,) is virtually a condemnation of the moral worth of his own pursuit.

I must not be misunderstood. I would not desire that a planter should exchange his physical duties for mental toil. In the first alone solid profit consists. The other is only an important auxiliary to his labours. Nor should I deem it prudent in him to engage extensively in any agricultural scheme, no matter how exalted the name under which it is heralded to the world. To the planter caution and prudence are virtues of inestimable value. In every experiment he should act, as though he doubted its efficacy.

Warmed and sustained by the lights of experience, let us not, therefore, reject the invigorating influence which theory so happily imparts to one of the most comprehensive and valuable of the sciences. Let us remember, that in relation to the regulations of his plantation, the most economical, yet, the most profitable mode of using time and labour, and the general guardianship which he personally exercises over the multitarious concerns of his estate, the planter must rely almost exclusively on the store-house of his intellect.

Respectfully, your obedient servant,

WHITEMARSH B. SEABROOK.

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ART. XLIII.—*Rules for the Government of the Negroes, Plantation, &c. at Float-Swamp, Wilcox County, South-Alabama: by HARRIS SMITH EVANS.*

“Float Swamp, February, 1832.

Dear Sir,—Believing that it might incite to investigation and inquiry, in a very important, but much neglected department of Southern Agriculture, I have prevailed upon myself to send you an extract from my “Book of Rules.”

There is no one subject, which our planters so much neglect, as that of the management of their negroes. And if they would look at it properly, they would surely not be long in discovering, that knowledge and skill in this particular, was absolutely essential to success in planting. Our planters generally are too much in the habit of yielding up this important department entirely to their overseers. Now if they will reflect a moment, they will readily perceive that the great mass of overseers are totally unqualified for this portion of their business. To manage negroes properly, an overseer must be, not only a man of natural talents, but he must combine the advantages of observation, experience, intercourse with the world, and not a little reading. For it requires all of these to enable us to learn and understand human character. And no overseer, who is not a good judge of human nature, will even make a good manager of negroes. Our planters, generally in this country, live at some distance from their plantations, and they are, in some measure, compelled to trust the management of their slaves to their overseers. In order to obviate this difficulty as much as possible, I have drawn up a set of “Rules and Regulations,” which I require my overseers to study as a text book. The following are some of them:—

*Rule 1st.*—My negroes are never to be scolded or brow-beaten. This rule I desire to be strictly complied with. Negroes are human beings; and nothing more completely cowers and prostrates the animal spirits, as taunting them with gibes, and sneers, and scoffs. Scolding operates injuriously in divers ways, according to the various dispositions of particular negroes. With some it has the effect of making them hardened, perverse, stubborn scoundrels: others again will be rendered stupid and foolish by it. And it always has the inevitable tendency to make them less valua-



ble. There are different kinds of scolding—and it is difficult to tell which is the most objectionable. Some managers (if indeed such people can be called managers) enact the characters of old women admirably. They are always fretting and fuming and promising to *chastise*, but never carry their promises into *execution*. They talk much, and act little. This class of managers are not worth their finding. Others again there are, who combine their characters of common scolds (*communes rixatrices*) and common lictors (*communes lictores*) in perfection. These, if possible, are worse than the former. They not only *lash* with their *whips*, but *whip* with their tongues. Under this process the moral, no less than the physical, the inward, no less than the outward man is subdued. The negro is not only corporeally bastinadoed into callousness, but his spirits are chafed into insensibility, and broken down and destroyed. Put the question to a lot of negroes, whether they would prefer severe *chastisement* of the *lash*, unaccompanied with chastisement of the *tongue*, to a moderate chastisement of the *lash*, accompanied with an immoderate chastisement of the *tongue*, and I venture to say, that nine out of ten would *declare* in favour of the former. Among the unhappy incidents of scolding by no means the least, is the unenviable and truly ridiculous attitude in which it places an overseer before his people. No man can scold much without throwing himself into a rage; and no man can be heated with excessive passion, without acting more or less like a madman. If an overseer goes among a gang of negroes, and raves like a *maniac* at them instead of stimulating, it will surely have the effect to paralyse their exertions. His conduct will excite *fear* in some, produce anger in others, and stupor in all. While he is certain to conciliate the good opinion of none and lose the respect of all. No man who has properly chastened his feelings, or schooled and disciplined his mind, or who has a proper respect for himself, or those around him, will ever permit himself to be carried away by passion. Every man who has a correct sense of propriety, will be ashamed to be caught in a rage, however, just the cause which may have produced it. How much more ashamed, and how much less excusable, ought he to be, who suffers himself to be thrown into a fit of hysterical convulsions, because forsooth, of the *omission* of some duty, or the *commission* of some fault by a mere passive slave.

Of all the people in the world, none require to school their passions more than the managers of slaves. A manager should never correct his people while in an excited state of feeling. He should always wait until he becomes perfectly cool and collected. Whipping in anger is liable to the following objections: the negro will be apt to think, and often justly too, that he has been whipped not for his own benefit, but purely gratify the malignant feelings and satisfy the rage, as he supposes of the overseer. When reason is dethroned it is impossible for a man to tell, or to know, what he is doing. He is equally unfit to judge of the quantity of correction necessary to be given, or of the manner, in which it ought to be laid on. A negro when spoken to should be addressed in a kind, paternal, but authoritative manner. Mild, but decisive language should always be used. If a negro asks a favour, it should either be granted cheerfully, or courteously and decisively refused. In the first instance he will feel grateful for the gift, not more on account of its real value, than for the bland and open hearted manner in which it was given. In the second instance, although he goes away disappointed, yet he will be satisfied, because he was refused for reasons, in which even against his will, he can see something of plausibility. If a negro applies to his manager for instruction about his work, or any thing necessary for him to know, it should be imparted readily and in a manner, at once affectionate and encouraging. Treatment like this will make him love his manager, and he will naturally transfer this feeling to his work.

*Rule 2d.*—My negroes are never to be *threatened* with chastisement. Threatening has all the evils common to scolding, together with some, peculiar to itself alone.—Threatening is highly objectionable. It can never under any circumstances do good, and it always does more or less injury. In the first place it is *unnecessary*. For if a manager has firmness and energy, (and if he has not these qualifications he is unfit to be on a plantation) his negroes will know what they have to calculate on as well without as with a threat. If a manager commands a piece of work to be done, and it is not done, he *chastises* for it. Now it is very natural for the negro to suppose when he is put to a similar employment, that if he acts as he did before, he will

be treated as he was before. Hence it is altogether unnecessary to create fresh fears, by threatening him with punishment. *The great evil of threatening* is that it will invariably drive the more *timid* into the woods. The *threatening policy* has converted many valueable negroes into hopeless vagabonds, and confirmed runaways. And it is thus, that many an honest planter, by the imprudence of his overseer, has his entire body of negroes ruined, and he himself brought to the brink of bankruptcy. A negro should never be threatened either before or after punishment. Some managers are in the habit of threatening before punishment, and some both *before* and *after*. The practice is a bad one in both cases.

*Rule 3d.*—My negroes are never to be treated slightingly or contemptuously, so as to lessen them in their own opinions. This is a rule, which although it may seem to be a trivial one, I deem highly important, and therefore strictly enjoin the most rigid adherence to it. A negro may be abused, and told that he is not worth a cent, until he will gradually adopt the opinion himself, and conclude that he is not in reality of any account. A negro should never be taunted with triflingness, or even with a want of physical power.

But Mr. Editor, perhaps the reader is ready to exclaim, "*O he jam satis.*" If his patience has not worn threadbare in reading, mine has, in transcribing.

Respectfully, yours, &c. &c.

HARRIS SMITH EVANS.

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ART. XLIV.—*Observations on the various uses to which Salt-Marsh may be applied; by the EDITOR.*

The great quantity of salt-marsh which borders our sea-coast, and grows with such luxuriance, might be turned to great advantage by such of our planters as live in the vicinity.



We are aware that it is much used by some, but the number of these are small when compared with those who might avail themselves of its benefits if they would, but who now almost (if not entirely) neglect it.

Some are indifferent to the subject, and others not aware of the uses to which it may be applied. Without pretending to know all of these ourselves, or the great advantages which may be derived from a more general and extensive use of the marsh, we still wish to draw the attention of our planters to the subject. As manure, it has long been tried on our sea-islands, and some experiments have been made with it on the main-land. We are not in possession of sufficient information to give these in full, suffice it for the present to say, that for cotton, corn and potatoes, it has been found most excellent. We are sorry that we are not able to give any thing like an account of the mode of using, and the benefits derived from its use, but none of these experiments were tried by us, and we cannot at present obtain the information from those from whom we received the statements. We hope that some of our correspondents who reside on the sea-board will give us accounts of their experiments, and thus fill up what we cannot at present. This much we know, that when it is carted into the cow-pen or stable, is trampled for some time by the cattle, and becomes well mixed with their excrements, it is one of the finest manures we have ever used for either the sweet or Irish potato. We have used this compost for other crops, but our experiments were not sufficiently accurate to enable us to determine its comparative value for them.

When we took up our pen, it was not with the intention of discussing its merits as a manure, but to notice its value as food for horses and cattle. During the spring and early part of the summer, the dray and cart-horses of our city are chiefly fed on it, and by some allowed no other provender. It is found to be beneficial to them, and that they continue in as good condition as when allowed hay. Many persons allow it to their gig and carriage-horses; and for our part we make use of it for all of our animals as early in the spring as we can obtain it, and continue its use for several months. We believe it to be highly beneficial, and our horses appear to improve very much on it; in fact, at no time are they in better condition than whilst fed on marsh. At first, it acts as a gentle purgative, and perhaps in this

consists some part of its benefits; this, however, soon ceases; should it not, it may be checked by a return to dry food, or by the use of rice-flour.\* It continues to act as a diuretic during the whole time of its use.

But it is not as food for horses and mules only, that it is useful and deserving of the attention of the planter. No one will doubt that if it is good food for them it will prove equally good for cattle, yet few think of procuring it for them, although growing so abundantly around, and fewer still think of collecting, curing, and stacking it away for their winter supply. Yet, independent of the better condition that the cattle would be in, the quantity of manure which could by this means be made, would amply repay the expense of collecting and putting it away to be fed out in winter. Before proceeding to this part of our subject, we will make a few remarks relative to it as green food. To those who are disposed to soil their cattle, the salt-marsh will prove a most valuable auxiliary, for independent of its being an excellent article of food itself, it is the earliest which can be obtained, unless uncommon pains be taken with rye, oats, or barley, or the planter be disposed to cultivate the *Elymus Virginicus*, to which we have before alluded in this journal. All of these, however, will require considerable attention, except the last (and even this will be much the

\* We know of nothing which will fatten a horse so soon (especially an old one) as rice flour and marsh, allowing one and a half pecks of flour per diem, and as much marsh as is usual. Many persons condemn the use of rice-flour as food for horses, especially for those which are at hard work, believing it is apt to founder them, and if it does not, yet it is too light for them to labour on. We have made use of rice-flour on our plantation for the last fifteen years as food for working horses and mules, and we have never had one foundered—their condition, moreover, has been, during our stay on the place, as good as we would wish. We could enumerate many plantations where the same plan is pursued with similar success. We are aware that this is somewhat at variance with the experience of many of our rice-planters, but we think it is no hard matter to account for the frequent founders which occur on their plantations when rice-flour is made use of. It is given to their horses and mules, in most cases, without restriction as to quantity, and the boy who has them in charge very often gives as much as one meal as ought to suffice for the whole day. As this food, when fresh, is much liked by all animals, horses and mules are induced to overeat themselves, and being carried out to work, and driven as usual, founder, as a natural consequence, ensues. This seldom or never happens when oats or corn is allowed, because, being more expensive articles of food, and having to be bought, or being raised in moderate quantities on the place, a regular quantity only is allowed to each animal, and this merely what is sufficient:—but allow the same free use of these, and would not the same occurrences take place? Let rice-flour be given in moderate quantities (never exceeding a half bushel a day) and no ill consequences will follow.

better for it) whilst the marsh is ready every spring for us, without the least trouble on our part, and we have nothing more to do, than to cut and bring it home. Our readers may be desirous to know whether it can support cattle alone—whether the milk is not totally spoiled by its use, or at least rendered so unpleasant as to be unfit for the consumption of the family—and finally, what quantity can be obtained by each hand.

To all of these queries we can speak from our own experience. We know not whether cattle can be fattened on it without the aid of other food, as our experiments were never directed to this point; but this much we have ascertained, that they will, on a liberal supply of green marsh, remain in good condition, and not lose flesh. We have tried this experiment twice—the first was with three milch cows which were kept up in a pen, and allowed nothing but marsh, and when turned out at the expiration of two months, in consequence of our returning to the city for the summer, they were in as good condition as when put up, although giving milk during the whole time. The last year we experimented upon twelve head of cattle. They had been kept up and fed during the whole winter, and although not fat enough for the butcher, yet were in very good order. As soon in the spring as we could obtain the marsh in sufficient quantities, we commenced using it freely, and although at first, in consequence of the inadequate supply, we were compelled to give other food, yet, in a short time, none other was allowed and on this they continued in as good condition apparently as when fed on other food. They were kept up until about the middle or last of May, and then turned out to pasture.

With respect to the quantity which a hand can cut and bring home, we have found three cords to be an easy day's work. He should be provided with a short bramble-scythe, and a small, narrow flat, or canoe, sufficiently large to hold his day's work. The flat can be made large enough for two hands, but more ought not to be employed together, nor ought large flats to be used. In either of these cases, it becomes more difficult to obtain the prescribed quantity.

But allowing all of these benefits to arise from the use of marsh, yet there is another objection to be got rid of, and that a very serious one. It is known to every one who has



resided on the sea-board, that, if a cow eats of marsh even in a very small quantity, the taste of the marsh is immediately communicated to the milk, and this becomes so disagreeable that nothing but necessity will compel any one to use it. It has hence been reasonably supposed that the milk is rendered totally unfit for any purpose. Not so. For tea or coffee, or any thing where *all* the constituent parts of the milk are required, it will be found to be too disagreeable for use, but for manufacturing butter or cheese, it is very little (if at all) inferior to milk procured from cows which have been running at large. In this we speak from experience;—not of one year but of several. Our discovery was accidental, and we therefore merit very little credit for it, for as we knew that turnips and cabbages imparted an ill flavour to both milk and butter, we concluded that marsh had the same effect, and our inquiry was not therefore directed to ascertain whether this was true or not. The first experiment we made to ascertain whether cattle could be sustained on marsh alone, was on three milch cows, which were at the time in full milking. We directed that the milk should be kept separate from that obtained from the other cows, and we were particular in seeing our directions executed. The cream at the proper time was also collected and kept separate. At the time we had no intention of making further use of them, but thought it would be as well, that the regular operations of the dairy should not be deviated from. After collecting a considerable quantity of the cream, we had it churned, and to our surprise, on tasting the butter found nothing unpleasant in it. So unexpected an event was not lost on us, we tried it again and again, and still with the same success. Thinking, however, that we might deceive ourselves into believing what we wished, (though at first the result was unexpected to us) we submitted butter made from cows fed on marsh only, to three gentlemen, whom we knew to be particular in this respect, informing them before tasting it, from what it was made. Two declared that they perceived no difference between it and such as they were in the habit of purchasing in market. The third thought he perceived some little peculiarity of taste, but at the same time acknowledged, that it might be conceit in him,

and had he not been informed of it, he doubted whether he would have noticed any thing peculiar in its taste. We have since communicated these facts to several of our friends, and we know that butter made from cows fed on marsh has been as readily sold in our city as any other. Our experiments did not rest here, but we proceeded to ascertain whether cheese made from such milk would also be free from all disagreeable flavour. We accordingly had several made, and found that although the curd was not altogether free from the taste peculiar to marsh milk, yet it was so slight as not to be disagreeable. We did not at the time taste the whey, or if we did, we are not now sure of the fact, but it is our impression that whatever it is in the marsh that produces the peculiar taste, it is absorbed by the whey, and that neither the cream or curd partakes of it. If we are correct in this impression, the flavour being preserved in the cheese made from marsh milk, may be accounted for, from the presence of some of the whey, which remained in the cheese notwithstanding all of the pressure used. If so, a remedy may be found out, and this difficulty removed.

But there is another use to which marsh can be applied, and to which we have already alluded. It is cutting and curing it in summer for the use of stock during winter. This is easily done, and we assure our readers will prove a real acquisition. It should, however, be cut in the spring or early in the summer, whilst it is still young and tender. If it is delayed until late, one half at least will be good for nothing. Being too hard, and woody to be eaten by the cattle, it will be trampled under feet, in which case, although the stock of manure may be increased, yet the object for which it was cut will be but partially obtained. As many hands as can be spared for this work should be set at it as early as the season will admit, and as each ought to cut from two to three cords per diem, a large quantity will soon be collected. As soon as it is brought ashore, it should be corded to ascertain whether the full quantity has been cut, after which, (or the next day) it may either be spread on the spot, or what is preferable carted to the stack-yard and there spread. It soon dries, and being porous, it may be put up sooner than most persons would think proper, in fact, in very dry seasons, we prefer curing it in small cocks, which we think

better: in which case the marsh is of a handsome yellowish brown instead of the dark dead colour it always has when fully exposed to the rays of the sun. This, however, must not be done in rainy seasons. It should then be, if possible, perfectly dried before it is put up. We at first lost many stacks before we discovered our error. As soon as it is sufficiently dry, it may be placed in stacks, or in long ricks, made, however, as high as possible, and with a good sloping roof. Some care must be taken in putting it up, for unless this be attended to, the rain will be admitted, and the centre will be found rotten. This can be easily avoided with a little care, and such negligence would deserve such a recompense. It will be much better, however, if it can be housed, as it will keep better and there will be no danger of its rotting. In its dried state, we do not think it will answer to feed cattle on alone but with the addition of cotton seed, rice-flour, or turnips, cattle may be made to improve and even be fattened on it, though in such a case we would recommend that some other dry food should be substituted for the marsh, near the time the animal is to be slaughtered, as the flesh of an animal fed on marsh is always disagreeable.

What we have stated in this article can be tested by many of our readers at once, and we shall be happy to receive an account from any one who has either tried it, or may be induced to do so. Our principal object in taking up this subject now, is to call the attention of our planters more to its value than has hitherto been done.

We cannot quit the subject without giving the credit of having first used the cured marsh for cattle during the winter to the gentleman to whom it properly belongs. We believe that Mr. James Cuthbert is entitled to this merit. It was from him, at any rate, we received our first hint, and we have practised on it, for many years, with much benefit to our cattle.

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ART. XLV.—*Account of an experiment in growing the Root Potato, and preserving Potatoes in cellars during the winter: by AN EXOTIC.*

" March 17, 1832.

*Mr. Editor,*—I promised you to offer, at a fit and convenient opportunity, my experience upon the failure of an experiment made on sweet potatoes planted early, and without previously, as is usual, forming a bed for their growth, &c. Feb. 18, 1831, about one task of red sweet potatoes were planted whole as follows:—a furrow was first made by the plough, in which was strewed a bed of pine-trash, on this were placed the potatoes which were covered with stable manure, and finally covered with earth by running another furrow near them, the land was high and warm. In April, the crop of potatoes planted 24th March, and in the usual way on beds, were as forward in coming up, as the former were which had been planted five weeks earlier and on the level. July 24, we commenced eating those in beds at the rate of three pecks to the bed; at the same time those planted on the level did not produce as much as the seed it took to plant them. In October, those on the level were as productive and large as those in the beds; both crops were suffered to remain in the field during the winter; they equally rotted to great waste in January. The level planting grew about four to six inches under ground, the other did not grow deeper than the natural surface of the land or base of the bed. I double-banked over a task of the bedded potatoes, previous to severe weather, these rotted if any thing more rapidly than those let alone.

Root potatoes are liable to great, if not total loss, after November, whether left in the bed in the field, gathered and placed as slips in banks, or housed in cellars. The only remedy for the failure of this most useful winter provision, may be found in that, with which I have succeeded to my greatest satisfaction this winter, in preserving slip potatoes; I did not know it in time or would have tried the experiment with the roots in preference to risking them in the field. A cellar is to be made with puncheons, &c. in the usual way, and commenced early in October, this allows time for green wood to dry and dampness to escape;

about a fortnight previous to gathering in the slips, some useless hand should take possession, and a moderate smoke be kept up day and night; this smoke to be continued in the same way during the whole period of filling the cellar with the crop. The cellar should front south where the door will be placed in the centre, thus affording, however, full entry between the two large bulks, wherein a small smoke not larger than that produced by a pipe or segar may be kept up day and night till the provisions are consumed—not in the usual way, mostly by rot, but as sweet and wholesome food. After the cellar is filled or the gathering of the crop is finished, the door may be kept open in mild weather in the day and shut at night. The hand can leave the cellar as soon as you commence filling; the smoke fed morning and evening will be sufficient. The upper part of the cellar should be slightly left open the whole length of the top, and covered with two boards nailed together as the ridge boards of a house, which are to be raised sufficiently from the top to permit the steam to escape, and, at the same time, prevent the intrusion of rain, &c.; the top to be closed up as soon as severe cold threatens. The smoke insinuates itself between every potato to the most distant corner of the cellar. The potatoes become dry and sweet as is usual when thus preserved in negro houses.

By this means, Sir, I have been enabled to preserve my crop of red potatoes at two plantations, scarcely losing ten baskets out of nearly three thousand. Whilst at another, where I had been unable to apply this remedy in sufficient time, cart loads of reds, and yams were thrown out previous to my arrival, but then, in carefully selecting the rotten and half decayed, and applying the smoke, the rest have been saved, and are now as sound as the day they were dug; in one instance I had a long hill, out of which half only were sorted as sound, put in an open board house, where they certainly would have rotted this severe winter, but the constant smoke produced not more than one basket out of four or five hundred that were put in sound. It is true, the potato is more apt to sprout at this season, but this is not as bad as to rot, and I find that the sprout is not as injurious as where it proceeds from moisture; the potato retains its dry nutritious sweetness, being acted upon only by warmth. I would advise those who try this experiment, by no means to suffer a

flame or hot fire to take the place of smoke; the fire will heat and may injure to a certain circumference, and to the distant sections of the cellar be a benefit if not an injury. The smoke, on the contrary, will be general in its effects, producing a mild and equal temperature throughout the cellar, and at the same time excluding the outward changes of the weather and drying up dampness.

I must, in conclusion, Sir, state, that this remedy is by no means my own invention. Having been politely invited by a planter in St. Paul's, to look into his cellar, I was struck at once with the beautiful state of preservation his potatoes presented. I inquired the method he pursued. Pointing to the magic circle beneath our feet, he said, "a small smoke you see there kept up day and night has saved my potatoes every year, whilst my neighbours have frequently lost their whole crops by neglecting to pursue the same plan." Since my knowledge of this advantage, I find many other have been in the possession of what I deem very important for the cultivators of the sweet potato generally to know.

AN EXTOTIC.

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ART. XLVI.—*Observations on the Raising and Manufacturing of Silk; by A. GEIGER.*

"Mount Gill, February 17, 1832.

Dear Sir,—

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My daughter has sent you a skein of silk of her raising and manufacture. There is a great deal said and written on the raising and reeling of silk; as far as this business has come under my observation, I think it a simple process, and which can be performed by boys and girls with more dexterity than by grown persons, and in all probability with as much judgment. All business requires attention, and so does the raising of silk, and without application and



attention, I say let it alone, for no business is successful without it. My daughter the last summer raised five pounds of cocoons, which she reels and manufactures into sewing silk. The process is performed on a common clock reel, and can be performed by any individual who understands reeling yarn. Put in a tub as many cocoons as you wish the size of the thread to be. Pour warm water over them, take up the ends of each cocoon, embody them, and proceed to reel. If one of the fibres should break, take it up and attach it to the thread; proceed on; but always mind to keep the water warm. This is the mode my daughter pursues to reel her cocoons, and I see no difficulty at all. The only subject is, would the raising of silk be a profitable business.

Yours, very respectfully,

ABRAHAM GEIGER.

The skein of silk accompanying this letter is really a most beautiful specimen of sewing silk. We have shown it to many ladies of our acquaintance (some of whom are fully capable of judging of such matters) all have admired it much, and some have pronounced it equal to any they have ever seen, some few thought it twisted a little too much. We fully agree with Mr. Geiger, that too much fuss is made about the raising of silk. The process is not difficult, and only requires attention and a little industry. We have no data, from which we could form an opinion relative to its profitableness in the *Southern States*. It appears to us, however, that it cannot prove otherwise, especially while cotton remains at such low prices.—*Ed. So. Agricul.*

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ART. XLVII.—*Observations on the Culture of Fruit-trees in the Southern States; by J. BUEL.*

“Albany, N. Y. March 1, 1832.

Dear Sir,—I am afraid I shall not be able to satisfy your inquiries as to the varieties of fruit best adapted to your

situation, I lack the requisites for a correct opinion, viz. an acquaintance with your soil and climate, and practical experience in managing the first. What I can say, therefore, must be drawn principally from analogy.

I must observe, in the first place, that I do not think you within the natural zone of the apple, pear, plum and cherry; and that your efforts to raise these fruits in perfection must necessarily be attended with much care and attention, and often terminate in disappointment. The deficiency has been partially made up to you by the congeniality of your climate for many of the tropical fruits. Coxe says, the zone of the apple is terminated by the James River on the south, and the Mohawk on the north. He errs, however, in regard to its northern boundary, and perhaps equally in regard to the southern. I have seen fine orchards as high as latitude forty-five degrees, on the St. Lawrence and on the borders of Lake Champlain; and *he* even admits that this fruit grows on the high grounds of the Southern States. I see by a late note in Loudon, that the European fruits thrive in New-Zealand, with the orange, lemon, yam, and other tropical productions.

In the second place, I think your soil is not adapted to the culture of these fruits. I have an idea that it is generally of two descriptions, sandy-plain and swamp, neither of which are congenial to these fruits. And if the defect is in the soil, or subsoil, the influence will not be confined to varieties, but embrace species. The better to be understood, I hold it as a sound axiom, that the soil must contain the elements of the plants which it grows, and that each species requires a peculiar food. Thus the primitive formation of New-England does not produce wheat, because, according to my theory, that soil has in it no organic remains, or other matter which affords nitrogen, one of the elements of the gluten of wheat. The plant grows well, but the grain is imperfect and shrivelled, unless lime, urine, ashes, or other matter containing nitrogen is applied to the soil. At Rome, in this State, and indeed for miles on the north side of the Mohawk river, neither the apple nor pear will thrive for any length of time, while on the other slope of the same valley, and within sight, both succeed to admiration. There is either something wanting, on the north side, which abounds on the south, which may be denominated the specific food of those fruits; or there is

something deleterious on the north, which does not exist on the south. Your soil, being marine-alluvian, may, like that of *our* Rome, either lack this essential pabulum of the apple and pear, or contain something prejudicial to their growth. I have been told that the plum does tolerably well upon Sullivan's Island (a formation, I presume, by the alluvian brought down by the river, principally from the upper country) and that most of our garden fruits are successfully cultivated in the elevated and interior parts of your State, where the soil differs from that on the sea-board.

I can more readily explain the reason of French dwarfs succeeding better than the standard trees from Mr. Prince. It is not from any difference in the varieties, or that the climate of the French nurseries approximates more to that of Charleston than the climate of Long-Island; but it is probably owing to the difference in the stocks upon which the fruit is grafted, and indicates a defect in your subsoil. The Paradise-apple and the quince, which are used as stocks for dwarf apples and pears, have a peculiar system of roots, which are small and fibrous, and never penetrate deep; while the roots of the ordinary apple and pear become large, and extend far and deep. The soil of my farm, a sandy alluvian, does not seem congenial to the pear. The trees thrive well a few years, and generally produce fruit, when they die without any apparent cause. This is also the case with the plum. I impute it to the bad quality of the subsoil, into which the roots in a few years push.

From these considerations I should recommend that you endeavour to counteract the effects of climate by selecting varieties originating in the south of Europe, or in the States south of the Susquehannah. Of apples, I can now only name the Barcelona Pearmain, and the Spanish Reinette from Spain, and the Mala Carla from Italy. Of plums and pears there are several varieties from Spain and Italy, the names of which I have not now the means of noting.

And, in the next place, that you endeavour to counteract the effects of a bad soil, or subsoil, by displacing as great an extent of earth as the roots of the plant are likely to occupy, and substituting that which is congenial to their growth, embracing, at least for the pear and plum, a portion of clay.



We expect three hundred dwarf pears from France this spring, and shall probably have many on hand in the autumn. These trees (upon the quince) are never very thrifty, and seldom handsome.

My bee-house is a close building, six feet square, and the same height, floored, boarded, clap-boarded and shingled; I put a swarm of bees in it in July. They promise to do well. I have just constructed a house in my garret, in which I intend to put the first migrating family that I can detain.

Your obedient servant,

J. BUEL.

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ART. XLVIII.—*Result of an Experiment to cultivate the Rhubarb-plant; by the EDITOR.*

There are several varieties of rhubarb which are used for the purpose of making tarts, and we believe all may. The *Rheum rhaponticum*, *R. hybridum*, and *R. palmatum*, are, however, those most generally cultivated for this purpose: the *R. hybridum* is said to yield the greatest supply.

We have before introduced this plant to our readers, and in the preceding volumes will be found directions for its culture and use. The last spring we distributed a large quantity of seed (consisting of several varieties) recently received from England, among our friends. We have as yet heard of the success of none. All who have mentioned the subject state a total failure, and we fear those from whom we have not heard have had no better success. We have not been quite so unfortunate, but have preserved some through the summer, although far less than we expected. As it is stated that the whole difficulty is in preserving them alive during that period, we hope that the next spring we shall reap some reward for our trouble.

We commenced our experiment by sowing some of the *R. palmatum*, on high, light, sandy soil, on the 15th of

March, and on the 26th we sowed some of the *R. compactum*, *R. undulatum*, and some other varieties, (which did not vegetate,) on a piece of moist, low ground, which was guarded against any excess of moisture by ditches. In the course of ten days the plants made their appearance, in very fine order. On the 5th of April, some of the *R. rhaponticum* were sown, which also came up very regularly. These plants had not been long up (the oldest not more than three weeks, and the youngest less than a week) when we were visited with a most destructive northwest wind, which blew so furiously, and was withal so cold, as to destroy even the vegetables which were protected;—they were not at all injured, although without protection of any kind. A heavy fall of rain about a week after, however, destroyed many, by beating them into the earth. Cucumbers, melons, &c. were also destroyed by it.

The greatest difficulty under which we labour in cultivating the rhubarb-plant, is to get the plants through the first summer, as they suffer much in their young and feeble state from heat. This critical period once passed, and nothing more, it is said (for we have as yet no experience) need be feared on their account, as they are then extremely hardy, and will last for many years. We endeavoured to lessen the violence of our summer heat by erecting over them scaffolds. That on the high ground was erected as early as the 18th of April, was made from three to four feet high, and covered with palings about three inches wide, with intervals of from two to four inches between them. We expected by means of this scaffold to mitigate the heat of the sun, whilst its height, and these intervals, would afford light sufficient, and prevent the plants from being drawn up. That, over those in the low ground, was erected several weeks later, and covered with a number of dry bushes, from which the leaves had entirely fallen; the rays of the sun were so broken and scattered, that on no part did they rest long enough to occasion much heat.

Our plants on both spots continued to flourish as well as we could with reason have expected them to do, until towards the latter part of May, when we lost a large portion of those sown on the high land, owing, we think, entirely to the want of moisture, for during that month we had but a single shower of rain, and that very slight:—the weather also was very cool. Whilst these were dying, those on the low

ground were growing most luxuriantly, and continued thus to grow until that most unfortunate high tide of the 10th of June (adverted to in a former article) broke over our banks penetrated into the ditches and partly covered one of the beds. Most of the plants were destroyed by it. Some few, however, survived, but were for a length of time so sickly in their appearance, that we doubted whether they would ever recover.

The last season was the most unfavourable we ever experienced for making experiments, (unless the experiment had been to ascertain what degrees of drought and moisture certain plants could endure) and extremely so, for the introduction of all new vegetables. Having in our account of the Aracacha stated these, we will not trouble our readers with a repetition.

Notwithstanding all of our difficulties, we managed to get near two dozen plants safe through the summer and winter, and these we have now growing and in fine condition on our farm. They are in about equal quantities on each scite, or perhaps, rather a few more on the high land, and this is owing, we think, not to that location being best suited for them in this climate, but because those on the low grounds were destroyed by the high tides.

From what we have witnessed during the whole course of this experiment, we are of an opinion, that moist land ought to be selected for sowing the seed and rearing the plants during the first year at least, even should it be found afterwards necessary to remove them to a higher and a dryer soil, which, however, we scarce think will ever be the case. It must be borne in mind, that the rhubarb cannot endure much moisture, and consequently that the ground must be effectually drained, so that no water may at any time lodge near the plants, which would in summer scald, and in winter rot them. The reason why we recommend low land for the first year, is, that our springs are generally very dry, and in fact, we are more apt to suffer in our climate from drought, than an excess of rain, especially in the early part of the season. The rhubarb plant, whilst young, is extremely susceptible of injury from heat, and if it has to contend with a drought at the same time, its chance of escape is rendered doubtful, if it be on light dry soil, where moisture sometimes is not to be found for several inches below



the surface. But if on the contrary it is on low ground, it will always find moisture enough, (except in extraordinary cases) for all the purposes of vegetation, and against an excess, precautions must be taken, by having the ground well drained. We would by no means omit a shelter to the plants during the first season, and we think a scaffold four feet high and covered with dried bushes so thick as to break the rays of the sun, though at the same time not so much so as to exclude them, will answer better than leaning a board on the south side of the row, as is recommended.\* We are aware that our recommendation as to a proper location for the plants, is directly at variance with all who have written on the subject, but it must be recollected, that all of these gave directions, for climates much more northwardly than ours, where the heat of the sun is not so intense during summer as here, where the winter is much more severe than with us, and the ground is covered for several months with snow. In low situations, it would be natural to expect it to rot, in such a climate, but with us we have much more to fear from drought and heat, than from much moisture or extreme cold. In fact our winters are rarely so cold and rainy, that a plant on low ground, well drained, would suffer, unless extremely tender.

But in making use of the term low ground, we do not wish to be understood as recommending such as would be included in the denomination of swamp lands: these, perhaps, would be found to be too low and difficult to be kept dry, but we mean an intermediate kind, such as is found in almost every cotton field, which without being very low, yet is sufficiently so, to supply moisture during such seasons as are dry and warm. Perhaps swamp lands may answer fully as well if not better, but we have no experience of them.

After the first year, all writers concur in stating that this is an extremely hardy plant, and requires but little care and will last for many years. In the Northern States it must be protected during the winter—this precaution will not be necessary here. Ours received none

\* A row, unprotected, were entirely killed early in the season although in low ground.

during the last winter—we did not have even a little earth drawn over the crowns, yet notwithstanding the severity of the winter, (which is seldom if ever exceeded,) we are not aware that we lost a single plant. All of which we marked (and many of which we did not) came up and are now flourishing finely. We know not to what size the roots grow in the first season in cooler climates, but one of ours on low ground, measured near one and a half inches diameter, and the first leaves now measure thirteen and a half inches across, which is larger than the leaves of some sent us from the North, although they appeared to be older plants. The roots of those grown by us were not, however, generally, more than half that size, and some of those on the high land did not reach more than half an inch in diameter. A few even on this spot are, notwithstanding, very fine plants, and some of their leaves measure from 8 to 9 inches across. Had there been a number of plants as fine as the one first noticed, we might, we think, have enjoyed the luxury of a rhubarb tart even this season, and we think that under ordinary circumstances, the leaves might be used the first spring after being sown. We remind our readers, however, that this is our first experiment, and the only one which has been made public in this State as far as we are aware, consequently that on several points we may be found to be in error, and therefore recommended to such as are willing to engage in its culture, not to place implicit confidence in the suggestions we make, but to experiment for themselves. Other seasons may give different results, and in the end we may have to retract. The facts are before our readers, and they may serve in some measure as guides. As to the speculations let them go for what they are worth, until we shall prove whether they are correct or not. We have sown more seeds, and we hope hereafter to state what has been the result of these, as well as of those which we raised last season, and also of some roots which we have imported.

We cannot quit the subject without strongly recommending to our planters to procure and cultivate this plant on their plantations. It is of most easy culture, especially after the first year. We sowed it in drills, eighteen inches apart, and merely kept them free from weeds. The tide and hot sun performed the work of thinning for us; (not much to our satisfaction, however, we must confess.)

Should success attend the labours of the cultivator, he must, the next year, thin them out to three feet distance each way. Those taken up can be used for making new plantations, or, if large enough, may be forced, by which operation they may be had during any part of the winter, and this with but little trouble. Directions for its culture can be found in the preceding volumes of this journal, and as to the forcing we need not say anything at present, as there are not plants among us sufficient to supply our wants in the ordinary way.

The only part of this plant used in cookery is the petioles of the root-leaves, which are peeled and cut into small pieces, and substituted for gooseberries and apples in making tarts. Being the earliest thing to be had for such purposes, it is much sought after in the Northern States and in Europe, where it is also much admired—by some preferred to the gooseberry, and by all highly extolled. It is also prepared as a conserve, and in this state is used during the time it is out of season. It is not only extremely wholesome, but highly beneficial in some cases. In a letter from an esteemed correspondent, he observes—"They [sea kale and rhubarb] will be an acquisition to you, especially the rhubarb, which has saved the life of my infant daughter, afflicted with the summer complaint. We use it now on all occasions of diarrhoea, for which it is an almost instantaneous remedy. We use it by making it into tarts, and it is the most delicious medicine ever administered. We have put up a pot of it as a conserve (in which form it is a great delicacy) for use in winter, either as medicine, or as a delicious tart for the dessert." Our readers will find directions in the fourth volume of this journal (page 219) for making it into conserves. They must not be startled at the word "medicine" in the above extract, for the part used bears no resemblance in taste to the root, which is the part usually administered as such, but is a pleasant sub-acid, which renders it highly palatable, and much to be preferred to unripe fruit, which is so often and so injuriously made use of. With us, it can be had very early. Our plants commenced vegetating this spring early in February. Our planters, therefore, can enjoy them on their plantations at a season when fruit cannot be had. Those who do not choose to take the trouble of raising the



plants, may import them from almost any of the Northern nurseries, or seed-stores.

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ART. XLVIII.—*Query relative to the Tanning of Buck-skin*; by PAUL PRY.

“ March 18, 1832.

*Mr. Editor*,—Some of your numerous readers or correspondents would very much oblige many of your subscribers, by furnishing a description of the manner in which skins are tanned most easily, expeditiously and usefully, by planters or farmers on their own plantations. There is an art in tanning buck-skins expeditiously, by liming, salt and alum graining, braining, and lastly, smoking, but the time required, and the manner of performing each of these operations, is the difficulty with which the uninformed have to contend. The manner of raising or thickening the skin, and at the same time making it soft and pliable, are principal points of experience most sought after. There are hundreds in this State, who are fully able to comply with this request, who may not be willing to write for the public, but may readily direct the pen of some obliging neighbour.

PAUL PRY.

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## PART II.

### SELECTIONS.

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#### ART. XXVIII.—*On Planting.*

[FROM THE LIBRARY OF USEFUL KNOWLEDGE.]

(Continued from page 201.)

*Management.*—This head comprehends an ample degree of practical skill in the superintendent and workmen; the erection of proper sheds, the means of carriage for composts, soils, plants, &c. immediately when needed. A quantity of compost and different soils should always be in readiness when wanted for the seedling beds, layer stools, and cutting beds, and a proper assortment of nursery garden tools, which shall be specified hereafter. The preparation of the soil, the mode of sowing, and the different kinds of forest-tree seeds, have already been described. All kinds of forest-trees, however, are not raised from seeds, either because they do not perfect a sufficient quantity for the general purposes of propagation, or are accidental varieties only of a species losing their characters of distinction when reproduced from seed. The following modes of propagation are found effectual when seeds cannot be obtained: first by *suckers*, second by *layers*, third by *cuttings*, and fourth by *grafting*.

1st. *Suckers* are shoots produced by the creeping roots of a tree, which, when separated from the parent root and transplanted, become perfect trees. They are generally sufficiently rooted in the first season of their production, and they should not be suffered to remain longer than two seasons attached to the root of the tree; for if continued longer, the support they derive from the parent root prevents them from making independent roots of their own in such abundance as they do when separated or taken up at an earlier period. The spring is the most proper season for taking them from the parent roots. When a small number of rootlets appear on the sucker, no part of the root from whence the sucker sprang should be left attached to it; but where the proper rootlets are deficient in number, a small portion of the parent root may be left with advantage. The plants should be planted in rows in fresh soil, and treated in all respects

afterwards as directed for seedling transplanted trees. The kinds of trees chiefly reared in this mode are :

The abele tree *Populus alba*.

Common white poplar, *Populus canescens*.

Aspen, *Populus tremula*.

Chinese ailanthus, *Ailanthus glandulosa*.

The first three kinds may also be propagated by layers.

2d. *Layers*.—The process of *layering* is well known : it consists in bending a young branch into the soil to a certain depth, and elevating the top part of it out of the soil in an upright direction ; in time the buried part takes root, and the shoot becomes a perfect plant. The root which produces the young shoots for layering is called the stool. Stools are planted about six feet apart every way in a deep fresh soil. The stem at first is either bent down into the ground as a layer, or cut over a few inches from the root. The shoots which are produced from its sides form the layers. The rooting of the layers is much facilitated by obstructing in part the descending sap ; this is essential to some kind of layers, though not to all : the common laurel, privet, &c., strike root readily without any artificial stoppage of the descending sap. The most expeditious mode of effecting this, is to cut a notch, slanting upwards to the origin of the layer, about half a diameter in length, and securing the position of the layer in the ground by a wooden peg. Where the shoot is of a nature that roots with difficulty, it is useful to split the *tongue* of the notch half way up, and to insert a small wedge of potsherd or wood to keep the division open. Rings of wire are also sometimes used for the same purpose, and cutting the bark round the part to within a little of the complete circumference of the shoot. In all ordinary cases, however, the slit or notching mode is perfectly effective. The ground should be kept quite clean of weeds, and watered in dry weather. When sufficiently rooted, the layers should be carefully cut away from the shoots, with all the fibrous roots attached to them, and planted in rows in fresh, well-prepared soil. The stools should have all the stumps of the branches cut away, and left to produce a fresh series of shoots for next autumn's layering. The following trees are propagated by layers.

Maple, silver stripe maple, *Acer campestre*, fol. arg.

Sir G. Wager's *A. dasycarpum*.

bastard, *A. hybridum*.

lobe leaved, *A. lobatum*.

mountain, *A. montanum*.

ash leaved, *A. negundo*.

Italian, *A. opalus*.

striped barked, *A. pennsylvanicum*.

cut leaved, *A. platanoides laciniatum*.

gold striped, *A. pseudoplatanus*, fol. aur.

silver striped, *A. pseudoplat*, fol. arg.



- Tartarian, *A. Tartaricum*.  
 Montpellier, *A. monspessulanum*.
- Alder, cut leaved, *Alnus laciniata*.  
 oak leaved, *Al. quercifolia*.  
 prickley leaved, *Al. glutinosa spinulosa*.  
 Turkey, *Al. oblongata*.  
 oval leaved, *Al. oblong. elliptica*.
- Birch, daurian, *Betula daurica*.  
 Canada, *B. lenta*.  
 black, *B. nigra*.  
 paper, *B. papyracea*.  
 poplar leaved, *B. populifolia*.  
 red, *B. rubra*.
- Hornbeam, cut leaved, *Carpinus bet. incisa*.  
 Judas tree, American white flowered, *Cercis silig. fl. alba*.  
 Date plum tree, *Diospyrus lotus*.
- Spindle tree.  
 gold blotched, *Euonymus Europ. fol. aur.*  
 silver, *fol. arg.*  
 white, *fruc. alb.*  
 pale, *fruc. pal.*\*
- Beech, broad leaved, *Fagus ferraginea*.  
 purple leaved, *F. sylvatica purpurea*,  
 copper leaved, *F. sylvatica cuprea*,†
- Ash, weeping, *Fraxinus pendula*.‡  
 curled leaved ash, *F. atra*.  
 flowering ash, *F. ornus*.  
 manna ash, *F. rotundifolia*.  
 striped barked ash, *F. straila*.
- Mulberry, white, *Morus alba*.  
 common, *M. nigra*.
- Tufelo tree, *Nyssa aquatica*.  
 mountain, *N. montana*.
- Bird cherry, *Prunus padus*.  
 Cornis, *P. pad. rubra*.
- Buckthorn, sea, *Rhamnus catharticus*.
- Lime tree, white, *Tilia alba*.  
 broad leaved, *T. Americana*.  
 common, *T. Europæa*.  
 red twigged, *T. Europ. corallina*.  
 downy leaved, *T. pubescens*.
- Elm, English, *U. campestris*.  
 striped leaved, *U. fol. var.*  
 Cornish, *U. sativa*.  
 hornbeam, leaved, *U. nemoralis*.  
 Dutch, *U. suberosa*.

3rd. *Cuttings*.—Shoots of one year's growth are the most proper to be used in this mode of propagating several kinds of forest-trees. The shoots should be selected from the most healthy and free-grown branches, and cut into lengths of from six to eighteen inches, according to the kind of tree. If evergreens the leaves should be cut off half way up from the root-end of the

\* These four trees are of low growth, and only for ornament.

† Propagated also by grafting.

‡ When grafted on the common or tall ash, the pendulous branches have a striking effect.

cutting. Deciduous trees should have shed their leaves before the cuttings are taken from them. The root-ends of the cuttings should be cut finely smooth, and inserted from about a half to three parts of their length into the soil. For every species of cutting, the soil should be light, and composed, at least, of half of fine silicious sand. There are many species of exotic plants, whose cuttings will only strike root in pure siliceous sand. It need hardly be remarked, that in this mode of propagating, watering is more particularly required to be attended to than in any other. The utility of the sandy nature of the soil consists in its retaining no stagnant moisture, but just sufficient for the wants of the shoot during the process of rooting. As soon as the cuttings are well rooted, if in a light soil of the above description, they should be carefully taken up and transplanted to their proper soil: for although the shoots produce roots more quickly and in greater abundance in the siliceous sandy soil, yet it is unable to support the growth of the plant after the proper functions of the roots begin. Next to that of propagation by seeds, plants may be increased by cuttings more generally than by any other mode: the process, however, requires more time, skill, and attention, than is demanded for rearing trees from suckers, or by layers or grafting; and it is therefore chiefly practised for the increase of exotic ornamental plants; but the following forest trees are most advantageously raised from cuttings:

Plane, American, *Platanus occidentalis*.

Spanish var., *P. acerifolia*.

Oriental, *P. orientalis*.

waved leaved, *P. cuneata*.

Poplar, Carolina, *Populus Carolina*.

Lombardy, *P. dilatata*.

Athenian, *P. Græca*.

Canadian, *P. monilifera*.

black, *P. nigra*.

weeping, *P. pendula*.

trembling, *P. tremula*.

Maiden-hair tree, *Salisburia adiantifolia*.

Willow-tree, common, *Salix alba*.

Peached, leaved, *Amygdalina*.

Duke of Bedford's *Russelliana*.

weeping, *Babylonica*.

round leaved, *Caprea*.

gray, *Uineria*.

crack, *Fragilis*.

spear leaved, *Hastata*.

common, *Helix*.

fine stemmed or smooth leaved, *pentandria*.

triandrous, *triandra*.

golden osier, *vitellina*."

\* This numerous and highly interesting tribe of forest plants, from the useful and varied properties which the different species evidently possess, demand more of the notice of the forest planter than they have yet received.

4th. *Grafting*, in forest-tree propagation, is chiefly had recourse to for those varieties of trees which lose their distinctive characters when reproduced from seed, and which makes finer trees when grafted on free growing stocks of their own species. The scions\* take more freely when not more than of one year's growth, but those of much older growth will succeed. The most perfect grafting is where the scion and the part of the stock to which it is to be united are nearly of an equal size, for on the perfect contact of the inner bark of the scion and stock depend the perfect union of the two in the shortest space of time, and consequent equal healing of the wound. The month of March is the best season for forest-tree grafting. The modes of grafting are numerous. French authors enumerate upwards of forty; for the purposes now under consideration, however, that termed *whip* or *tongue* grafting is generally followed. The scions should be selected from the more upright, free-growing branches; the middle portion of the shoot is the best; but where there is a scarcity of grafts, the top and bottom may be used, as these will succeed, though not likely to produce such fine trees. From two to five buds should be left for the production of a leading stem and branches. The stock should be cut open in an oblique direction, and the scion in like manner, at a corresponding angle; a slit should then be made in the stock about the middle of the wound, passing downwards, and a similar slit upwards in the scion; the upper division of the scion made by the slit, termed the *tongue* or *wedge*, is then inserted into the cleft of the stock, and the inner barks of the stock and scion brought into perfect contact, at least on one side. This should be effected with as little delay as possible. The parts are then to be bound with a riband of bass, and particular care should be taken that, in this part of the process, the junction of the two barks is not in the least displaced. To protect the grafted parts from drought and moisture, and from the action of the air, various means have been adopted, but the most direct and useful is well-worked clay, cleansed of gravel or small stones, and horse-droppings, well incorporated and mixed in the proportions of three parts of the former to one of the latter; a little finely-chopped straw is added with advantage. The clay should be placed on the grafted parts an inch thick on every side, and extend about half an inch above and below the union of the

ed. The extensive and important trials instituted by John Duke of Bedford, now in progress, to investigate the comparative merit of all the different species of willows, will afford much useful information on the subject.

\* Scions may be separated from the parent stock some time before grafting, without suffering injury from being kept, but to the root-ends should be placed in earth to prevent the bark from shrivelling. The ascent of the sap in the stock being more advanced in the stock than in the graft, is sometimes advantageous.



stock with the graft.\* Another mode, called *saddle grafting*, is perhaps better adapted for forest-trees than the foregoing, but it takes up more time in the performance. The stock should be cut so as to leave the top in the form of a wedge; the scion split at the lower end, and each side of the incision pared obliquely, so as to form the two divisions into tongue-like processes; these are then seated on the wedge and made to fit accurately to each side of it. The after operations of tying and claying are the same as in the former mode. The trees which come under the forester's care that require to be reared by grafting are the following:

- Broad leaved evergreen oak, *Quercus ilex latifolia*.
  - entire leaved, *Q. ilex integrifolia*.
  - Lucomb's, *Q. Exoniensis*.
  - Turner's *Q. Exoniensis Turneri*.
  - broad-leaved Locomb's *Q. Exoniensis latifolius*.
- Sweet crab tree, *Pyrus oronaria*,
  - Siberian crab, *P. prunifolia*.
  - willow leaved, *P. salicifolia*.
  - Chinese, *P. spectabilis*.
  - wild service, *P. terminalis*.
  - white beam, *P. aria*.
  - Swedish white beam, *P. aria dentata*.
  - small fruited crab, *P. baccata*.
- Heart-leaved poplar, *Populus candicans*.
  - various leaved, *P. heterophylla*.
  - smooth-leaved, *P. heter. levigata*.
- Upright medler, *Mespilus germanica*.
  - weeping medler, *M. ger. diffusa*.
- Entire leaved ash, *Fraxinus simplicifolia*.
  - striped barked, *F. striata*.
  - variegated, *F. variegata*.
  - white American, *F. Americanus*.
  - black, *F. Amer. pubescens*.
  - red *F. Amer. rubrus*.
- Gold striped beech, *Fagus sylvatica fol. aur.*
  - silver striped, *F. sylv. fol. arg.*
  - copper coloured, *F. syl. cuprea*.
  - purple leaved *F. sylv. purpurea*.
- Gold striped Spanish chestnut, *Castanea vesca, fol. aur.*
  - silver, *C. ves. fol. arg.*
  - various leaved, *C. ves heterophylla*.
  - shining leaved, *C. ves lucida*.
- Gold striped horse chesnut, *Æsculus hippocastanum, fol. aur.*
  - silver, *Æ. hipp. fol. arg.*
  - yellow horse chesnut, *Æ flava*.
  - scarlet, *Æ. paria*.

The stocks of these trees should be raised from seed of the common species, to which each variety is nearest allied, for the nearer the connection of the stock with the graft the more lasting is the union and more perfect the growth. In trees that have been grafted on unsuitable stocks, we frequently see the

\* It is a highly useful practice to draw earth up round the clay so as to cover it entirely from the sun and air.

base of the stem abruptly contracted to a smaller circumference than the upper portion, and *vice versa*, just as the stock or the graft happens to possess the freest habit of growth. The stocks should be planted in rows two feet apart, and should be one foot distant, plant from plant. When arrived at two years of transplanted growth they will be in a fit state to graft. The grafts should be united to the stock as near to the root as convenient. This facilitates the vigorous growth of the tree, and allows of the earth being drawn up on each side to cover the *clayed* portion of the graft. The clay should be removed from the grafts, and the ties or bandages loosened when the progress of the new shoots of the graft indicates the perfect completion of the process. In the spring following that in which the trees were grafted many of them may be transplanted to their permanent sites, but it is better, as a general rule, to defer transplanting until the second autumn or spring. The size of the different kinds of trees most suitable for final transplanting is a point of some importance, particularly when the planting is on a large scale, and where the preservation of every fibre of the roots of the plants cannot be accomplished without an unnecessary expense of time and labour. A very young plant may be readily taken up and transplanted with its roots entire; but a plant several feet in height requires considerable care in taking up to preserve its roots from injury. The structure and the functions of the roots of trees, as connected with the produce and support of the plant were before described, and clearly point out the essential use of the minute rootlets and their accompanying spongeols or glands to the nourishment of the plant in every stage of its growth, and under every change of circumstance. Accordingly we find that, if a plant is taken up and transplanted with all its roots entire and uninjured, it experiences scarcely any perceptible check, unless its roots are exposed to the effects of the sun and wind for any considerable time, in which case it makes little, if any progress for a season. A moderate degree of pruning, however, of the overgrown and straggling roots of young trees, possessing the reproductive power in a full degree, and of the branches of their stems, is often expedient, and, when judiciously performed, is beneficial: it prevents the accident of doubling up the roots, or improperly disposing them in the soil, an evil of worse consequences to the plant than the shortening of an overgrown root, or lateral branch. To trees which possess the reproductive power in a very imperfect degree, pruning the roots or branches preparatory to transplanting is injurious. The facility with which young plants of any kinds can be taken up without hurting the roots, and the slight pruning which they require at that stage of the growth, point out as a general rule in deciding on the most proper size of the different species of trees for final transplanting, that the non-productive kinds should be of the smallest

size or earliest stage of growth, and those in which the reproductive power is greatest of the largest size. If we divide the stem of a Scotch fir, or a larch, a corresponding stem is not reproduced; but if we cut down, in like manner, a willow, or even a chestnut, or an oak, a vigorous stem will follow. Where the habits of the roots is to divide into large branches, and run deep into the ground, as in the case of the oak, younger plants are required for transplanting than in those instances where the habit of the root is to produce numerous fibres. The nature of the soil also dictates, in some measure, the size of the plants. In rocky, elevated soils that cannot be ploughed or trenched, nor can allow of proper sized holes being made with the spade, plants of one or two years growth, or such as have small roots, can only be planted: when exposed to severe winds, plants above one foot in height are loosened in the soil, and never prosper. For the purposes of general or extensive works of forest planting, the best sizes of the plants of the different species of trees at the period of transplanting to their timber sites, may be thus enumerated:

1st. *Non-reproductive or Resinous Trees.*

	HEIGHT.	
Pinus, <i>abies</i> , common spruce fir, from	6 to 20 in.	
<i>alba</i> , white spruce.		
<i>rubra</i> , red spruce.		
<i>nigra</i> , black spruce.		
<i>sylvestris</i> , Scotch fir.		
<i>laricis</i> , Corsican fir.....	24	
<i>uncinata</i> , hooked fir.....	18	
<i>pumila</i> , upright coned fir.....	12	
<i>Mughus</i> , nodding coned fir.		
<i>pungens</i> , prickly coned fir.		
<i>Banksiana</i> , Hudson's Bay fir, in pots*	24	
<i>Pallasiana</i> , Prof Pallas' fir.		
<i>pinaster</i> , cluster fir.....	6	20
<i>pinea</i> , stone pine.....	6	18
<i>maritima</i> , sea-side pine.....	6	18
<i>Halepensis</i> , Aleppo pine.....	6	18
<i>inops</i> , Jersey pine.....	6	18
<i>resinosa</i> , pitch pine.....	6	18
<i>variabilis</i> , various leaved pine.		
<i>Clanbrassiliana</i> , dwarf pine.		
<i>ceda</i> , frankencense pine in pots.		
<i>serotina</i> , fox tail pine.		
<i>rigida</i> , three leaved pine.....	6	20
<i>palustris</i> , swamp pine. in pots.		
<i>longifolia</i> , long leaved pine.		
<i>Cembra</i> , Siberian pine.....	6	18

\* By this is meant such sorts of forest trees as from their rarity, or recent introduction of very small quantities of their seeds, have rendered the utmost care and caution necessary in the first attempt to cultivate them here; by and by, instead of being raised in pots, the seeds may be found to succeed equally well in the open ground.



	HEIGHT.	
<i>strobilus</i> , Weymouth.....	12	36
<i>excelsa</i> , Bhotan, in pots.		
<i>cedrus</i> , Cedar of Lebanon, in pots.		
<i>deodara</i> , Indian cedar.		
<i>pendula</i> , black larch.....	6	24
<i>microcorpa</i> , red larch.		
<i>lorix</i> , common larch.		
<i>Canadensis</i> , hemlock spruce....	9	20
<i>dumosa</i> , bushy pine, in pots.		
<i>taxifolia</i> , yew leaved, in pots.		
<i>picea</i> , silva fir .....	9	20
<i>spectabilis</i> , purple coned, in pots.		
<i>balsamea</i> , balm of Gilead .....	9	20
<i>Fraseri</i> , double balsam, in pots		
<i>adunca</i> , crooked.		
<i>Romana</i> , Roman.		
<i>Siberica</i> , Siberian pine.....	9	20
<i>pichta</i> , pigmy pine, in pots.		
<i>orientalis</i> , oriental pine.		
<i>Lambertiana</i> , Lambert's pine, in pots.		
<i>ponderosa</i> , heavy wooded.		
<i>Araucaria imbricata</i> , Chili pine.		
<i>Taxodium distichum</i> , deciduous cypress.		
<i>Cupressus sempervirens</i> , upright evergreen cypress.		
<i>thyoides</i> , white cedar.		
<i>Juniperus Virginiana</i> , red cedar.		
<i>Thuja occidentalis</i> , American arbor-vitæ.		
<i>orientalis</i> , Chinese.		
<i>plicata</i> , Nee's.		
<i>Caroliniana</i> , Lucas' arbor-vitæ.		

## 2d. Reproductive Trees.

	HEIGHT.	
<i>Quercus</i> , oak, different species of from	6 to 30 in.	
<i>Fraxinus</i> , ash, different species of.....	6	20
<i>Castana</i> , Spanish chesnut.....	12	30
<i>Æsculus</i> , horse chesnut.....	12	30
<i>Fagus</i> , beech, .....	6	20
<i>Betula</i> , birch .....	9	30
<i>Alnus</i> , alder.....	6	24
<i>Carpinus</i> , hornbeam .....	6	24
<i>Platanus</i> , plane .....	12	30
<i>Acer</i> sycamore .....	6	30
Maple common.....	6	24
Norway.....	6	24
Grafted and layer reared species	12	36
<i>Tilia</i> , lime, common, and others.....	12	36
<i>Ulmus</i> , elm, wych.....	9	30
Grafted and layer reared species	18	36
<i>Populus</i> , poplar, different species of... 18	18	36
<i>Salix</i> , willow tree, species of.		

Those species which are mentioned as raised in pots for transplanting, except the cedars and a few others, are as yet considered merely ornamental trees, the period of their introduction not having allowed sufficient time to prove their properties or comparative value as timber trees. It is desirable to plant them,

with a view to ascertain that point, several of them being highly valuable in their native countries. The *pinus Lambertiana* has been found to have attained to the growth of 200 feet in height, and 57 feet in circumference.\*

### XXIX.—*Improvement of Worn Out Lands.*

[FROM THE AMERICAN FARMER.]

First Premium Essay, Agricultural Division, by R. K. Meade, White Post, Virginia.

(Continued from page 209.)

We will return to our practice on the poor field. One of the difficult and secret arts in improving poor land, is to ascertain with precision, what depth it should be ploughed in order to avoid mixing too great a proportion of the least improvable and unproductive earth with the better part. This may be discovered by experiment of the farmer, but is to be more readily ascertained by chemical analysis. Here now appears the direct advantage of science, its overwhelming power.

Sir Humphrey Davy, the prince of agricultural chemists, or any of our scientific men would tell us in a few hours, if not minutes, the quantities, and qualities of our soils, how to mix them, and otherwise operate on them, in order to their restoration to productiveness again. The farmer, and he must be judicious too, would require as many years to produce through a set of experiments a satisfactory result. It is evidently a secret worth finding out, the due admixture of soils to promote their greatest productiveness, what kind of manures, and at what stage of their fermentation, they may be most advantageously applied to the soil. Some years since I made an experiment on an unproductive, and peculiar piece of ground, surrounded by a kind and generous soil on all sides; it was covered so heavily with strong barn yard manure, as to require a hand to go before the plough and draw it into the furrow, to hide effectually the manure: a crop of corn was planted and well cultivated on the ground, the growth was heavy in its appearance, but not won-

\* Transactions of the Linnean Society of London, vol. xv. part ii. page 498.

derful, in its grain production. The most extraordinary and mysterious part of the experiment to me was, that the manure was completely exhausted by the growth, as I must suppose, of the corn; so much so, that when it was again turned up for wheat in the autumn, no one would have inferred it had been heavily manured in the spring; so completely was it decomposed and exhausted by the corn. The nature of the ground has not been changed, nor can it be—my inference is, until it is aided by some other earth, which if applied in proper proportion, would have restored it to permanent fertility, filling up the vacuum which the manure had failed to do. The wheat crop was but little better than usual, while slight manuring on the surrounding lands made a fine crop of wheat, following the corn. In the time of Dr. Debutts it was in contemplation to send a block of this earth to Baltimore, but it is hoped that ere long such experiments will be conducted at a Fellenberg institution, under some talented professor, at this place. That there are many secrets in nature which are occasionally developed by appearances accidental, or by the aspiring genius of man is certain, but they are chiefly beyond his control in the present limited state of philosophy, and may forever be, for some wise purposes of the Creator, and one of them, not the least perhaps, to keep the faculties of man in progressive and perpetual reach after the unexplored things of earth and heaven.

The Creator of the Universe having formed numberless races of intelligent beings originally out of the dust of the earth, it was a matter of no importance to him whether it was rich or poor, grey or black, coarse or fine, or of what denomination soever; but man with all his boasted powers, cannot grow a single vegetable, or a blade of grass, without a certain arrangement, a due combination of such materials as have been afforded him by the God of nature; and if he ignorantly deranges or destroys such a composition as our soils in nature present, so in proportion will he feel the disadvantages of it, and by a perseverance in error, finally bring about sterility to the earth, and starvation to its inhabitants. He who studies nature, looking up through sentiments of love and adoration to nature's God, will become wise, consequently better fitted in all respects to act a more judicious part in life. Under these impressions he will again repair to the worn-out fields, and endeavour to unite to the best advantage those labours which give health and tone to the body, while the mind is looking forward with anticipated delight on the work of the hands.

As the first important demonstration on poor land is to clothe it with grass, no opportunity should be neglected to have every square inch of it thickly set, and uniformly plastered once in the year; manuring wherever the grass appears most sickly and doubtful in its progress; when the land shall be so well sodded



as to admit of grazing to some profit, and yield tolerable crops of hay, hopes may then be entertained of introducing the plough, which should be done most cautiously indeed, as one false step would undo for a time, what years had been doing, and produce great additional expense; if the land is ploughed beyond a certain depth, which cannot possibly be suggested here, regulated as it always should be by the state of improvement, depth of the soil, nature of it, and other circumstances, it might be almost as difficult, expensive, and take as much time to improve another surface as the first; for if the land is ploughed so deep as to put the two or three improved inches of surface beyond the action of the atmosphere and sun upon it, the case would actually occur.

Numberless are the applications and receipts to heal the wounds, galls, and gullies of the different grades and kinds of worn-out lands; but there is a class of gullies beyond the ingenuity of man to arrest, but much might be done by adding to the ordinary means a ditch or furrow to convey the drops of water off, above the breaks of a number of little gullies, or indeed from very considerable ones, while a check was given at the head of them; but I confess I know but little about this part of farming. When the surface is unlacerated by such terrible washes, there is always hope in the poorest soil; there is a balm in Gilead; a diseased patient must be treated with great discretion and tenderness; neither the system of Tull, whose panacea was perfect pulverization, nor of More, and many others, who thought deep ploughing an infallible receipt, could ever restore to life such far-gone subjects; the extremes of zealots must be avoided, their favourite systems well scanned before they are adopted; but the advice of the apostle may be accepted at all times without risk, which is to be temperate in all things, and patiently wait for the result of the most judicious measures which can be resorted to; the economy of every plan in its two-fold sense should be well devised before carried into effect, otherwise, there is no knowing what losses may be sustained, and the pernicious influence it may have on the energies and progress of a well disposed and industrious man. There are but few farms to be managed just alike, and this shews the necessity of judgment and experience, or an opportunity of recurring as a physician, lawyer, or divine would do, to his authorities; one in a hundred may perhaps commence judicious arrangements, and proceed with a profitable course of husbandry adapted to his peculiar situation, without reading, experience, or the like, but the ninety-nine will suffer for the want of good advice. There is a grosser ignorance on subjects of the soil and its productions, than on any others whatsoever. The genius of man\* soars up into the

\* Not such men as Isaac Newton, and that class of philosophers, who make science their basis, enlarging and improving it still more by the efforts of their mighty minds in humble subordination to the great first cause.

skies, into the highest heavens, and not unfrequently has the presumption to lay plans, even for the Deity himself, questions the wisdom of his decrees, decides on his prerogatives, &c. and is as wonderfully great in his own eyes as he is little in the view of infinite wisdom. All this time the humble earth which has escaped his vision, and might be a paradise with the application of his talents, virtues and industry, is stript of its forests, and robbed of its original beauty and fertility by the ruthless hand of man, by its own lords and cultivators, who are never satiated until the very bones of their once beautiful subjects are exposed to the view and ridicule of every passing traveller, who look at them with pity too, and say this poor man, the proprietor of this ground, (not soil) must be extremely ignorant of his profession, or an ungodly man, given to inebriety, gambling, horse-racing, or an inordinate love of the chace, &c., or this could not possibly have been. Yes, the genius and talent of man are bestowed upon every other subject with the greatest avidity, in preference to that original and important one, the resource and dependence of our very existence, the general source of comfort, health and pleasure of all the inhabitants of the earth. Works of imagination in their ten thousand airy forms, vain, idle, useless, sinful, are conjured up by the thousand, filling the shelves of libraries with more than useless lumber, there to seduce the feeble mind to waste its precious hours in its pursuit; has precedence of the beautiful and sublime studies of nature, overlooks every thing most captivating and desirable, to speculate in notions which cannot be comprehended, will never feed or clothe the poor, inform the ignorant, or aid in the extension of peace and industry throughout the earth, or even improve a single acre of poor land.

A farm may very fitly be compared to a complicated machine, which if not uniformly oiled and kept in perfect order, will fail in its operation, and finally tumble to pieces; if the various labours on it are not performed with skill, in due time and season, there will be inevitable disorder, hurry, confusion and loss. It rarely happens that unfavourable seasons are a real obstacle to the progress and success of a judicious and industrious farmer's operations; it is the deficiency of knowledge, foresight, judgment, observation, a want of understanding in all his profession, that throws him back, he had no confidence in himself, nor could he have, he looks abroad for a signal from his neighbours, and if perchance he is very watchful, and there should be a good example near him, he may by humble imitation do tolerably well; but notwithstanding he often deranges matters by putting the cart before the horse, by a deviation in short from the wise and established maxim of doing all things in order, and not delaying for the morrow what should be done to-day. A considerable

absence for our poor field, makes it desirable to examine it with the view of ascertaining whether some portions of the soil have not proved too obstinate for the harrow, plough, manure and grass seed. If such be the fact, and no alternative presents itself, original principles must be resorted to. From your alluvial bottoms too light for any but corn production, remove the soil back again to the hills from whence it came. Such grounds should first be ploughed up, and the new soil spread on the surface and harrowed in, a small portion of manure would then have the effect refused it before. As this labour will be considerable, great care must be taken not to pursue any course of cultivation having a tendency to precipitate this improved composition to the bottoms again. But farmers say the labour is too great in renewing their soil by the transportation of the rich bottom land to the *caput mortuum* they have made by murderous cultivation. Let us see which will cost most, and the most probable productive, the annual employment of a reasonable capital in making new land out of old, or the employment of a capital far greater, in the fruitless attempt to make bread and meat enough to eat. Is not the fact well established, that in our southern country, from Maryland to Georgia, the proprietors of thousands of tracts of land are compelled yearly to sell off a part of their negro family to feed and clothe the rest, and sustain the unprofitable establishment? A few acres recovered every year, would bring back in time to a state of competent fertility large tracts of lands, but the same number annually destroyed, will effectually depopulate our country. It is a distressing and melancholy reflection that so many homes which have been comfortable, and might have been made much more so, have been, and are to be abandoned for a cabin in the wilderness.

Intermixtures of the soils are of most extensive importance; but there are comparatively few farmers who are aware that the earth we cultivate from four to eight inches deep, is composed of three or four distinct soils according to chemical experiments. As a well known proof of the value of combining them, the same clay which has been meliorated by the light, friable earth on the towering hill, is carried to the deep vale, which would otherwise be entirely unproductive, but then produces great burthens of hay of various kinds. Horticulture should be much more indebted to intermixtures than it ever has been, but it is now becoming so much of a science in the neighbourhood of our cities, that there is every hope of its success, and will, we trust, impart to agriculture a stimulus not to be forgotten as long as there is a poor knoll, or an unfruitful valley in the land.

The economy of using gypsum as a manure, which appears in some places to be almost a part of the earth, is becoming more and more manifest, from the fact which is much agreed to

amongst the farmers in this part of the country, that half a bushel to the acre, is equal in its operation to any greater quantity, and that even the half of that shows great effects in grasses. It is almost needless to say, that its regular application to lands under improvement, those specially manifesting a lively sensibility to its use, not only gives vigour, and abundance to its surface production, but also thickens, enlarges, and ramifies the roots, which are of equal, if not superior importance to the tops, when the plough shall have performed its office of turning them under to ameliorate by decomposition.

A word or two on the subject of ploughing in green crops, which have been sowed with a view of improving land, one of the supposed modes of improvement which it is rather recommended to avoid. This system of improvement has also had its zealous advocates. Some singular and fortunate experiments at different periods, and under various projectors have magnified it in their minds to be a matter of so much importance that they have forgotten so large a portion of their favourite material is water, innocent and inefficient. They argue that no strength has been deducted from the land by the growth of a green crop, and that consequently the land must be fertilized by embedding a heavy green sward of any kind under its surface. It is true, the land has parted with but little of its fertility while the crop is in a green or soft state, but the more it has retained, the less of course it has imparted to the substance of the green crop, and the more succulence it possesses, the least efficient will it be as a manure. Even admitting its effect to be probably advantageous, it is a most costly mode of manuring at any rate, when grain is sowed to produce it, such as rye, oats, barley, buckwheat, corn, millet, &c. &c.

When the land has strength enough to bring a respectable crop of straw, it is believed that it should be made into more efficient manure and applied to that portion of the land requiring most aid, instead of turning in the crop generally without regard to the particular demands of the land. We conclude then that this is one of the modes of improvement, which should be generally avoided, especially on poor land that requires the most woody and substantial manure. In some twenty five years after various experiments, I have not succeeded more than once, to an extent worth remembering, and that under the most favourable circumstances. Half a dozen acres, part of a large field, which had been laid down in clover for two years, was ploughed in the month of June, a rich growth of clover in bloom was well turned in, and wheat, with due cultivation, sowed on it in the fall—a great crop was the result. Who will now undertake to decide, whether the result was the offspring of the green crop, or the previous improvement by shade, and the falling of the leaves,



&c.? I incline to say, both. With a view to the general system of turning in clover, many other experiments have been made and failed. A twenty acre field divided into three parts, a portion ploughed before harvest in the green state, a part of that division mowed off to vary the experiment, the other parts ploughed after harvest, the one-half having been previous mowed; the production was uniform.

Notwithstanding these general failures, I have but little doubt, that there are soils, situations, and have been experiments made, to favour a belief that in some places it may prove beneficial. Those who have much faith in it, should detail all the circumstances connected with their experiments.

We are of opinion that worn-out lands in their various grades and degrees are upon the whole, more dependent for improvement, on a judicious and bountiful system of compost-making and manuring, than on any other general plan of their resuscitation. With such impressions the ordinary domestic materials to compose a system will be mentioned. Corn stalks, when cut as soon as the corn is ripe and securely stacked, a crop eloquently described by Arator, (Col. John Taylor, of Caroline, Va.) to be the meal meadow, and manure, of the Farmer, stands at the head of the list. Straw in its varieties, the clothing as well as the food, of almost all of our animals, that would shiver and shake without it through our cold winters, and be very unproductive of manure; leaves and virgin earth from the woods, wherever they can be spared without injury to the trees; lime, ashes, and every species of trash, which can be collected and thrown together in the farm pen. Our poor field before this, no doubt has discovered the necessity of calling on the compost heap for aid, it should be our business then, knowing the materials we have to work upon, soberly, and industriously, to combine them to the best advantage.

But first we will notice an essay in the *American Farmer*, No. 19, vol. 13, on Dr. Ravenel's\* success, as it is one of the necessary preparatives to a complete system of compost making, and truly worthy the imitation of every farmer. The effects of perseverance in such a plan, it is hoped will in time be communicated to the Farmer, as there is no whim, imagination, or speculation to be found in it. The unquestioned success of a few gentlemen of reputation communicated to the *American Farmer*, could not fail of having a national effect. So simple and so evident appears to be the operation of so valuable a practice as a regular system in farming. My poor testimony to its importance, is offered with great pleasure from considerable experience, with this difference, that half the year only at intervals, has been employed in conveying materials from the woods, &c. to the farm

\* Of Pushee, St. John's, Berkley, S. C.

pen; the effect of which, when carried to the fields would too much lengthen this essay. Suffice it to say they are perfectly satisfactory, yielding a rich reward for the particular additional labour.

Dr. Ravenel keeps a small force in constant action, accumulating every variety of material his plantation affords, to litter his farm pens. The plan pursued is simply this, which has been remarked upon by the editor of the *Southern Agriculturist*, in a manner which does him very great credit. An old woman is kept constantly employed in raking trash in the woods, and an infirm fellow, (who is incapable of performing any laborious work,) with a mule and cart, is employed in bringing it in, and littering these pens, in which the cattle, hogs, and sheep are regularly penned every night. The same plan is pursued with the stable. These hands are never taken from this work on any account, (as much as to say, if I neglect this, after operations will fail in proportion to the neglect.) It is their portion of plantation work for the year, and although both put together, could not in the field perform the work of one able bodied hand, yet in this way they are of more value than the best of them.

Dr. Ravenel estimates their value to him (employed in this way) at the labour of six hands—that is, were he deprived of the manure made by them, he would be obliged to work six additional hands to make up the deficiency, which would necessarily accrue in his crops. We doubt whether the estimate be not too low. Six hands might enable him for a few years to retain what he would otherwise lose, as he would be able to cultivate so much the more ground. But would his fields be in the same progressive state of improvement, which they now are, or rather would they not be in a few years nearly unfit for cultivation, and he be obliged to resort to the too common practice of clearing new fields and abandoning the old ones? If this would be the result, their value cannot be estimated, by the difference of products of one or two years, but the future condition of these fields must be taken into consideration. This plantation as may be supposed under such management, has undergone a considerable change for the better, ever since this system was adopted.

The number of animals which are nightly penned, are from two to three hundred, and from such a large stock well supplied with litter, it may be supposed that a large quantity of manure must be made under judicious management, and that this is the case, may be learned from the fact, that for manuring of the present crop, one thousand one hundred and twelve wagon loads (equal to four thousand four hundred and forty-eight single horse cart-loads) of manure were carried out and spread in the fields.

“In the course of eleven years the product of the corn fields has been doubled. They at first yielded not more than ten

bushels per acre, and now from eighteen to twenty-two, and with every prospect of increasing productiveness. The results obtained from the other crops have been equally satisfactory, and we need scarcely say that this system is persevered in."

"Another practice pursued by Dr. Ravenel is deserving of the attention of every planter. It is the manufacturing on his plantation, with his own slaves, from the wool and cotton produced on the place, all of the clothing and blanketing necessary for the use of his negroes; and this is done without subtracting any thing from the effective force on the plantation." This is truly an excellent paper throughout, and highly to be recommended, especially coming from South-Carolina, where we fear there are not many such examples in the agricultural way. Surely, this gentleman, if he is not a friend to the tariff, cannot be a nullifier, but satisfied to retain the constitution as it is.

We would say amen to it, with a single exception, made to the penning of sheep, especially in a southern climate, a practice objectionable even in a northern one, in certain seasons of the year. Apropos—can it be stated with a certainty whether black sheep, like negroes in a southern sun, can bear its intensity better than white ones? Dr. Ravenel's motive for inclining to raise none other is the convenience of mixing the wool with cotton—but how is the mutton, and what the productiveness of the wool? &c. Should this essay ever chance to fall into the hands of the Dr. or the editor, it would be highly acceptable to be informed on the subject—one of such interest, and so explicitly avowed, as to make even black sheep, a prominent part of southern improvement; perhaps they may be esteemed more valuable because they eat less than the white ones.\*

*(To be continued.)*

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\* We leave this query to be answered by Dr. Ravenel, and will merely undertake to prove hereafter to Mr. Mead, that Southern Agriculture is not quite so indifferent as he supposes, and this we will do by giving him accounts of other plantations.—*Ed. So. Agr.*

ART. XXX.—*On the Mulberry Tree, Silk Worms, &c.*

Translated from the French for the *Genesee Farmer*, from a work entitled  
“*The Practical Course of Agriculture.*”

(Continued from page 212.)

*The Coconiere.*—Silk worms require particular care in bringing up: and the place destined to this purpose, which is called the coconiere, has almost as much influence on them as their food itself. The spinning place should be of a size proportioned to the quantity of worms which it is calculated to raise; nevertheless, it is better that it should be too large than too small, for nothing is so hurtful to the worms as their being too much crowded; also taking care not to have more worms than there be trees at hand, from which to procure them nourishment, so as not to be obliged to buy leaves, which are not always easily procured; and in that case the worms would be in danger of starvation. But whatever may be the dimensions of a coconiere, there never should be hatched in it more than from\* three to four ounces of seed. The profits diminishing in proportion to the too great quantity of worms collected together under the same roof; the care of them being so much multiplied they would not receive proper attention. When the insects have arrived at the time of their great voracity, they create confusion among their nutritives, by which great numbers of them perish; by this an immense quantity of leaves are uselessly consumed; besides, the greater the number of worms put in one apartment, the dearer will their nourishment be, on account of the distance which it is necessary to go to collect it.

During the first fifteen days, the worms being small, take up so little room, that no trouble is found in lodging them; but the more they increase in growth, the more it is necessary to augment the dimensions of their habitation. So long as they are small, paper boxes will be sufficient for them, then, rush, straw, reed or wicker baskets, which may be placed in the little apartments allotted them, taking care not to place them too near one another.

In general small rooms succeed better than those which are very large. The worms, like other animals, are subject to contagious diseases, which may be avoided by raising them in many separate rooms.

A room in an airy situation with an eastern aspect, is to be preferred, windows facing the north and sometimes those of the south are to be avoided, and it must be kept secure from the winds by well glazed windows; each window should be provided

\* French weight.



with an outside shutter, in order to protect the worms from too great heat and cold when necessary. The walls within should be well plastered, and the top and bottom perfectly tight; in a word, every crevice must be closed against the winds, cold, rain, lizards, bad smells, insects, rats, mice and birds.

As the worms take up more room in proportion to their growth, a light and strong frame-work should be erected in the middle and the whole length of the room, composed of many heights of shelves, which may be increased in proportion to the height of the ceiling, placing them from eighteen to twenty-four inches from one another. The breadth of these shelves should be an arms' length, that the middle may be conveniently attended to: it is necessary that they should have an edge some inches high to prevent the leaves and worms from falling.

Cleanliness and good air contribute greatly to their health and growth. On a clear, sunshiny day, from time to time, air should be let into the room; during extreme hot weather, the windows, only towards evening, should be open for two or three hours; and not only the floors which receive the fragments of the leaves, but in general the whole place should be kept perfectly clean. In order to preserve them from the rigours of our climate, it is proper to give them pure, temperate air, which should be continually renewed: and plenty of light contributes still more to make them vigorous. The greater part of those who take care of these insects close the windows when it rains, and when the air is damp: but it appears that bad smell is more hurtful to silk-worms than damp air.

When the cocooniere is conveniently furnished with shelves to contain the silk-worms, the necessary instruments in a spinning place are those which are proper for communicating heat, step-ladders and thermometers, distributed and placed in different parts to ascertain the difference of its temperature. Stoves are much better than pans to give a moderate heat, which can be maintained at the same degree: one thing only to be observed, is, that the opening in these stoves and furnaces for putting in the wood, turf, or charcoal, with which they are heated, should be placed without the spinning place, and should shut with a little door made of strong sheet iron, to prevent the smoke from penetrating into the cocooniere.

The art of hatching the silk-worms requires much care and attention: 1st. that the worms may hatch at the exact time when there is food for them; 2d. not to hatch more than is proportioned to the quantity of leaves that can be obtained for them; 3d. to manage so that they may all be hatched in the space of three or four days. Without this latter circumstance, some would cast their skins sooner than the others; which causes much trouble.

The hatching of worms may be prevented for a long time by keeping the eggs in cool, dry air; and, likewise, in order to make them hatch quickly, they may be exposed to moderately warm air. That which is too hot bakes and kills them.

It is necessary to procure good seed, and not to be mistaken if you have not collected it yourself: it is easily known by its deep colour, similar to that of the slate stone. On breaking it with the nails it makes a little cracking noise; a vicious and transparent humour should come out of it: without these two qualities it is bad.

According to the usual mode, we try to hatch the worms as soon as the buds of the mulberries placed in favourable situations begin to shoot out; which happens at the end of April or the beginning of May. In the space of a few days the leaves begin to spread sufficient to feed the insects.

In order to hatch the eggs, they may be placed in a small room, keeping a heat equal to that of a person warm in bed. For example, by heating moderately one of the stoves of the spinning place, and placing on its top the seed of the worms in boxes, it will hatch very well, if sufficient care be taken to keep up that heat in a sufficient degree; but it is necessary to commence by giving a very moderate heat, and increasing it by degrees; thus, the first day it may be kept at eight degrees; the second, from ten to twelve; and the following from fifteen to eighteen, until the tenth or eleventh day which is the time of hatching: the main point is not to force them to hatch too quickly. It has been argued that worms hatched at fourteen or fifteen degrees gives silk which is strong, sinewy, and of a better quality.

When the seed is at the point of hatching it turns of a whitish colour. As the worms hatch, those which are black or brown should be preserved; they are the best: but those which are red should be thrown away, because they consume leaves without any profit. When there are only a few which hatch before the others, it is not worth the trouble to raise them; it is better that the whole brood should come out at one time, so that they may acquire only one looking after, and that they may cast their skins at the same time: this saves much trouble and care. As soon as the seed is seen to change colour and the eggs are at the point of hatching, a sheet of paper pierced with small holes very near one another should be placed over each box, and as fast as the worms hatch they pass through by means of these holes to seek their food. It is very necessary that these young and tender leaves should not be in the least wet with rain or dew; upon this attention the health and life of the insects depend.

While the eggs are hatching, care should be taken to keep up a moderate heat which should not be interrupted. Too little heat causes the worms to come out slowly, and weakens them:

if too hot, they hatch quickly ; but are red or bright brown, and are already diseased. Nothing contributes so much to preserve these insects from every accident, as to keep them continually in air heated from fifteen to eighteen degrees of Reaumur's thermometer : it cannot be questioned, that too intense heat and too intense cold is equally hurtful to success in the raising of worms.

Care should be taken to put separately in a box, numbered, all the worms that hatch during the day. There are two modes of giving an equal degree of strength to the worms which have been hatched within three or four days : one is, to feed the least forward three times a day, and the strongest only twice, until they have come up with them : the other mode is, to keep the weak in hotter air than the strong. A proof of good success in hatching is, that, when they first cast their skins they are all *sick* at the same time. When one part is more backward, they should be separated from the rest, should have more food given them, and should be kept in hotter air, that they may all cast their skins at once the second time.

Experienced cultivators adopt the method of hatching as many again of these insects as they wish to raise ; but it is with the intention of destroying half of them a short time after their birth : they pick out the best, and destroy the rest without pity, fearing that they would uselessly consume a precious leaf. We conceive that a practice so prudent requires much attention and experience on the part of those who adopt it.

(*To be continued.*)

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ART. XXXI.—*On the Cultivation of the Palma Christi, or Castor Oil Bean ; by E. F.*

[FROM THE WESTERN PLOUGHBOY.]

*Mr. Sawyer*,—The mode of cultivating the Castor Bean, in this vicinity, is to beak up the land and lay it off in rows, six feet apart each way. Drop four beans in a hill, as the cut-worm is very fond of them. The best time to plant, is from the 1st to the 10th of May. Half a bushel of seed will suffice for ten acres of ground. They are cultivated in much the same manner as corn. In old land, where domestic weeds abound, the one horse harrow, with three hoes, is the best utensil for the first tending. When the

plant has attained the height of six inches, they should be thinned to one stalk in a hill.

They begin to ripen about the middle of August, previous to which time the yard for spreading them on should be prepared. It should be made on ground of a gradual descent, open to the sun, and made very smooth and firm. The first and second parcels that ripen, must stand till the pods on the ear begin to crack, otherwise a part of the beans will be imperfect. Later in the season, when the stalk is more mature, they must be cut, when two or three pods begin to open, or they will waste. For harvesting, we use a one horse sled, with a box that will hold twelve or fifteen bushels, taking two rows on each side, and cutting out the ripe ears with a knife. They are laid on the yard one ear deep, either by hand, or spread with a rake. They must be laid nearer than six or eight feet of the border, or a part will bound off. In warm clear weather, a layer will pop out in three days. When the upper side of the ears have opened, they should be raked and stirred frequently, till done. When all have opened, the stems are raked off. The hulls, or chaff may be mostly taken off with a scraper. As they accumulate, they may be taken off on a hand-barrow. The remaining hulls may then be swept off with a broom made with naked switches; which, if carefully done, will not leave more than one bushel of hulls in eight of beans. They may then be cleaned with a common wheat fan, with a riddle suited to the size of the bean. I have found this mode much preferable to the common one of winnowing hulls and all together with a fan: first, because it requires less labour; secondly, it takes less room to hold the beans, till a quantity is ready for market. In a good dry soil, they will yield from fifteen to twenty bushels per acre. *Prairie*, broke the same season, is not suitable. They require a rapid growth in a climate where the seasons are short. In land of the second or third ploughing, they may be planted six and a half or seven feet apart. One hand can tend *five* acres.

*Ridge Prairie, Madison County, Feb. 27.*



### PART III.

#### MISCELLANEOUS INTELLIGENCE.

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*Farm School.*—A large and highly respectable meeting has been held in Boston, at which it was resolved to raise by subscription \$50,000 for the establishment of a Farm School, and \$3,000 annually to sustain it. A Committee was also appointed to carry the resolutions into effect, and to petition for an act of incorporation, if they think it necessary.—*N. Y. Far.*

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*Fowls.*—It should be remembered by those who keep fowls, that they will not do well when fed upon whole dry grains unless they have plenty of gravel stones: these should be supplied them as regularly as any part of their food. Again, if they are shut in close pens, they should be supplied with lime in some shape, otherwise they will lay eggs with soft shells. Where they can be had, pounded clam or oyster shells should be given them; where these are not convenient, rubbish from old walls or lime mortar will answer, or pounded lime-stone mixed with the gravel-stone. As to the breeds of the common barn fowl, it is somewhat a matter of fancy: and if we go upon the principle that a small fowl only consumes food in proportion to its size compared with a large one, it does not appear so material only as regards the shape, proportion and colour which render them more valuable when dressed. So far as our observations have extended, we think a mixture of about from one-eighth to one quarter of the Malay breed with the common dung-hill fowl, gives as fair proportions and colour as any brought to our market: with these proportions the colour is uniformly brownish yellow, with yellow legs and skin, which is preferred by most people in this country, Sir William Curtiss' opinion to the contrary, notwithstanding, to those with black legs, the size good, and flesh fine; whereas the Malay breed when pure are long legged, and rather coarse in flesh, and the young are more tender and difficult to raise, which may be owing to their nudity, as they are not covered with feathers as early as the common breed.

*Capons.*—We will make the inquiry through our paper whether any person in the States has practised rearing *Capons* for their own table, or for market, and if so, would be glad to receive from them an account of the advantages or disadvantages of the practice, to lay the same before our readers.—*Genesee Farmer.*

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*Silk.*—We notice that the inhabitants of the town of Poughkeepsie intend applying to the Legislature of New York, for the incorporation of a company, with a capital of thirty thousand dollars, to be employed in the cultivation of silk.

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*Culture and large product of Corn.*—We are much obliged to Mr Devereux for forwarding to us, the following article from the Messrs. Pratts. We do not doubt the statement as to the quantity of corn produced by

their mode. We have often heard the facts verbally, and are glad to be able to record them thus authentically. One thing must be borne in mind, that they cultivate the dwarf species, the same as is generally cultivated throughout the Northern States; and that with our large species, gourd seed, &c. a greater distance must be allowed between the plants in the drills. We would suggest an improvement in the drills of the Messrs. Pratts; that is, that the hexagonal would be far preferable to the quincunical form, which latter is the one they use. All the plants would then be exactly the same distance from each other, measure which ever way you will, while by their mode they are six inches from one plant and eight from another.

Utica, March 7, 1832.

Mr. Smith—Dear Sir—I am well acquainted with the Messrs. Pratts, and consider them gentlemen of character and responsibility, and I feel every confidence in the statement they make.

Very truly, yours,

NICHOLAS DEVEREUX.

Pratt Hollow, Madison County, New-York, March 2, 1832.



The above is a view of two drills which are laid out five feet from centre to centre; the drills are opened with a large plough by turning two furrows from each other, then filled with hog or cattle manure, taken from the barns where we fatten our hogs and cattle; the manure is levelled down and covered from two to three inches deep; then we have a tpe made with three slats and points in the latter as thick as we wish the seed, which is six inches one way, and about eight inches the other, making from forty to fifty thousand plants on the acre.

The common way of planting gives only about ten thousand plants to the acre. In the above mode of planting, we have grown 173 bushels of corn to the acre, and we have no doubt but we can grow 200 bushels to the acre with a favourable season and proper soil. That we have grown from 150 to 170 bushels of corn to the acre, we can prove by unimpeachable testimony. We give you full power to make use of our names in relation to any facts contained in the foregoing statement.

Yours, respectfully,

J. & M. PRATT.

To Mr. M. Devereux, Utica.—*Amer. Far.*

*Peruvian Cotton.*—We have seen a specimen of the Peruvian Cotton recently imported at Boston from the Pacific. The quantity imported is nearly 400 bales, or 60,000 pounds, and it cost in the country of its growth only one cent a pound. The loss of weight in ginning is about 60 per cent. The plant from which it is obtained, we are informed, is a tree, which grows spontaneously in the western parts of South America.—*N. Y. Daily Adv.*

*Sage.*—Sir John Sinclair, author of the Code of Health, strongly recommends the use of sage-tea, made from common garden sage, as a remedy for disorders of the throat which arise from the bad state of the stomach. He tried the experiment on himself, using a bath of vinegar and water for his throat when sore from a cold—and the sage with great success, when the

other remedy failed. He drank a pint of the tea in a day, in doses of a wine-grass full at a time.—*N. E. Farmer.*

*The Mango Tree.*—The Mango Tree bears fruit of an excellent quality and large size, and is in season from March to September. When the natives of Manilla are desirous of producing a premature bearing, the following method is adopted: heaps of straw or rubbish are placed around the tree and set on fire, having been previously so placed that the smoke could ascend among the branches and leaves, which seems to bring forward the blossoms prematurely; this process is repeated for several successive days, generally taking place in the evening. A premature bearing of this fruit yields a great profit to the owners, one tree producing from 3,000 to 4,000.—*Asiatic Journal.*

*Hogs.*—The Chinese have a proverb, that “every gentleman in China works for his living except the hog.” We make *him* work in Illinois. When a chimney is to be built, or a cabin to be daubed, a hole is dug in the earth, of sufficient dimensions, and water poured into it—the hogs are then called, and a few grains of corn thrown into the hole, when the hogs plunge in, and soon prepare the lump of clay for the hand of the dauber.

*Western Ploughboy.*

*Dwarf Fruit Trees.*—*Mr. Fessenden*—Observing in your No. 31, some queries respecting dwarf fruit trees, this may inform that I have seen a garden bordered with dwarf fruit trees, perhaps none taller than two and a half feet; the tops spreading very wide, and well loaded with apples, pears, and peaches, many touching the ground. The gentleman who planted them being dead, I obtained no account how the dwarf was effected.

I have since been informed, through a channel worthy of credit, that the mode of making such dwarf trees is very simple and easy. On the limbs of fruit trees there are what I called forked twigs, (fruit spurs,) say two or three inches long, that bear fruit. Take and graft them into a piece of root; put on the wax, and plant it in the garden, and it will grow into a dwarf fruit tree.

I have only tried one experiment, by setting such a forked twig in an apple stock. It grows slowly enough for a dwarf tree and produced apples. I am now two aged, feeble, and trembling with the palsy, to graft any more.

Respectfully,

SAMUEL PRESTON.

*Stockport, Pa. March 3, 1832.—N. E. Far.*

*Magnificent Cypress Tree.*—In the gardens of Chapultepec, near Mexico the first object that strikes the eye is the magnificent cypress, called the cypress of Montezuma. It had attained its full growth, when that monarch was on the throne, (1520,) so that it must now be at least 400 years old; yet it still retains all the vigour of youthful vegetation. The trunk is forty-one feet in circumference, yet the height is so majestic as to make even this enormous mass appear slender. At Santa Maria de Tula, in Oaxaca, is a cypress 93½ English feet in circumference, which yet does not show the slightest symptom of decay.—*Ward's Mexico.*

*Lime-water for destroying Worms.*—The use of Lime-water for destroying worms, was lately discovered in a garden near Edinburgh, by the overflowing of a brook strongly impregnated with alkali from the refuse lime of the gas-works. Wherever the soil of the garden was reached by this water, it threw up myriads of worms, which never returned again to their holes.

*Scotsman.*

*Keeping Potatoes.*—Amongst all the discoveries for keeping potatoes for summer use, we believe there is no way more effectual than to take out the eye or bud with a knife, or some sharp instrument. This not only renders the potato more valuable for keeping, but is a matter of economy with the farmer; for if he will prepare a knife for the purpose, which he can do by bending the point of a common case-knife, and grinding it in such a manner that the eye can be scooped out without cutting deep into the potato, the eyes so scooped out will plant as much ground as the potatoes would if planted with them; and it is affirmed by many who have given it a fair trial, that they are equally productive. Thus the valuable part of the potato may be saved for family use, or boiled and given to stock, which at this season of the year require a little extra feeding. When boiled, mashed and mixed with milk and fed to calves, they have a very good effect, and if a little meal is also mixed with them, calves may be fed cheaper and equally as well as when fed on milk alone.—*Genesee Farmer.*

*Ruta Baga in Georgia.*—The turnip seed arrived here safe, and I have done with them what perhaps no man in the southern part of our country ever will accomplish. From one acre of ground I have gathered at least 70 to 80 wagon loads of the largest sizes some measuring seven inches, and others nine inches in diameter. This is what we Georgians call *doing well*.—*American Farmer.*

*Light arable soils may be too much pulverized.*—"I quite agree (from experience) with Mr. Wallace (vol iii p 36,) in thinking light soil sometimes injured, rather than improved, by too much digging, &c. I have for some years adopted the plan of sowing August turnips on ground hoed and raked, in preference to the digging, provided the ground be in good heart and not too much bound. I find the seed vegetates much sooner and is less infected with the fly; and, as the plant grows faster and bid defiance to the fly, they make less top but better roots.—*Gard. Mag.*

*Sulphur in Trees.*—One of your correspondents inquires whether any one has ever tried to drive caterpillars or insects from fruit trees by putting sulphur or brimstone in the body. I'll tell you what I once did. I had a fine thrifty young weeping willow about three inches in diameter. Soon after leaving out in the spring, it became thickly covered on all the new shooting branches with green *aphis* or plant louse; so much so that it could not grow at all, and I was apprehensive that the tree would be nearly if not quite destroyed. The rascally black and red pismires were continually travelling up and down the trunk and branches of the tree in great numbers. What business they had with the plant lice above, I never knew; whether they destroyed them or ministered to their increase, I cannot ascertain; but they were both preying, as I supposed, on the young shoots and leaves together. With a half inch augur I bored the tree, say five feet from the ground, about three-fourth through the body. I then put in and filled as compact as possible the hole to within half an inch of the outside, with brimstone; made a plug of wood, drove it in tight, and cut it smooth to the bark. In three days, the whole concern, *aphis* and pismires, abandoned the tree. It immediately threw out its young shoots, and grew luxuriantly; the new bark closed over the plug, and the tree was no more attacked that year. It was several years ago, and the tree is now a fine large one. This is the only experiment of the kind I ever tried, and I imputed all the benefit of driving away the vermin to the sulphur. Let those try it who have occasion, and put the result in your paper. This sage theorizing on a mere matter of fact subject is nonsense.

ULMUS.

*Genesee Farmer.*